Shutoff BOSCH-INJ.-PUMP TEST SPECIFICATIONS electromagnet Volt: 12 Note inst. in remarks column Supply-pump pressure Speed 1/min: 1500 Charge press hPa: 1000 Setting value bar: 7.10...7.50 KSB/AFB Test scheet Edition FIA : 16.03.93 replaces Calibrating oil : ISO-4113 valve Volt: 12 : VE4/11F2100R493 Injection pump Shutoff : 0 460 414 096 Type number electromagnet Volt: 12 Customer Part-No. : Full-load del. with charge press.: Customer-specific information Speed 1/min: 1750 Charge press. hPa: 1000 Customer : FIAT-AUTO Del. quantity cm3/ 1000s.: 62.50...63.50 Engine : M711 KT 19.L KSB/AFB TEST BENCH REQUIREMENTS Volt: 12 valve Shutoff Overflow restricti: 1 463 456 344 electromagnet Volt: 12 Dispersion cm3/: 4.0 1000s.: (4.5) Calibrating-oil return temp. with thermometer : 54.00...56.00 Full-load del. w/out charge press.: Inlet press., bar : 0.30...0.40 1/min: 750 Del. quantity cm3/ 1000S.: 44.00...45.00 Calibrating nozzle-holder : 1 688 901 116 assembly KSB/AFB 11 valve Volt: 12 Shutoff Opening Pressure bar: 207.00...210.00 electromagnet Volt: 12 Perforated-plate Low-idle speed regulation diameter mm: 0.5 1/min: 450 Del. quantity cm3/ 1000S.: 6.00...10.00 Test inj. tubing : 1 680 750 073 KSB/AFB Outside diameter : 6.00 x Wall thickness : 2.00 valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.0 1000S.: (6.5) x Length mm: 450 Start of delivery Prestroke mn: -(from BDC): -Full-load speed regulation Speed 1/min: 2400 Charge press hPa: 1000 Del. quantity cm3/ 1000S.: 30.00...34.00 Injection pump setting values Test specifications in parentheses Timing-device travel KSB/AFB Speed 1/min: 1500 Charge press. hPa: 1000 Setting value mm: 6.00...6.40 valve Volt: 12 Timing valve Volt: 2 Shutoff AFB/AFB electromagnet Volt: 12 valve Volt: 12

AO1

Start:	- Shutoff
Cons. d. 44.1 . 400	- electromagnet Volt: 12
Speed 1/min: 100	- 8th speed 1/min: 1000
Del. quantity cm3/: 31.0033.00 mind 1000S.: -	- Charge press. hPa: 1000
mind 1000S.: -	- TD travel mm: 3.605.60 B
KSB/AFB	- mm: (3.4U5.8U)
Valve Volt: 12	- KSB/AFB
Shutoff	- valve Volt: -
electromagnet Volt: 12	- Shutoff
<b>4</b>	- electromagnet Volt: 12
Load-dependent start of delivery:	- 9th speed 1/min: 450
Inj.—qty.dif.measurement:	- Charge proce hPa: 1000
1	- Charge press. hPa: 1000 - TD travel mm: 2.903 10 A
Speed 1/min: 1500	- mm: (2.004,00)
Charge press hPa: -	- KSB/AFB
Inj. qty. cm3/	
difference 1000s.: -8.0010.00 #	
	- Shutoff
KSB/AFB	- elestromagnet Volt: 12
valve Volt: 12	_
Shutoff	<ul> <li>Supply-pump pressure characteristic:</li> </ul>
electromagnet Volt: 12	_
SP press.—dif.measurement +	- 1st speed 1/min: 1500
pompa di mandata (FP) 🕴 🕌	- Charge press. hPa: 1000
1.Speed 1/min: 1500	- Supply-pump
Charge press hPa: -	- pressure bar: 7.107.50
Supply pump	- KSB/AFB
pressure	- valve Volt: 12
difference bar: - 0.100.30#	- Shutoff
KSB/AFB	- electromagnet Volt: 12
valve Volt: 12	- 2nd speed 1/min: 2100
Shutoff	Change appear to the total tot
electromagnet Volt. 12	- Charge press. hPa: 1000
pompa di mandata (FP)  1. Speed	- Supply-pump
Transation were track and it is the	- pressure bar: 8.208.80
Inspection pump test specifications	- KSB/AFB
Test specifications in parentheses	- valve Volt: 12
+	- Shutoff
Timing-device characteristic:	- <u>e</u> lectromagnet Volt: 12
+	- 3rd speed 1/min: 750
2nd speed 1/min: 2000	- Charge press. hPa: 1000
Charge press hPa: 1000	- Supply-pump
TD travel mm: 7.708.50	- pressure bar: 5.205.80
mm: $(7.209.00)$	- KSB/AFB
KSB/AFB	- valve Volt: 12
valve Volt: 12	- Shutoff
Shutoff	- electromagnet Volt: 12
electromagnet Volt: 12	- Ctect of agrice vote. 12
3rd speed 1/min: 1500	<ul> <li>Overlow quantity at overflow valve:</li> </ul>
Charge press hPa: 1000	over tow qualitity at over itow valve:
TD travel mm: 6.006.40	1st speed 1/min. 750
mm: (5.506.90)	- 1st speed 1/min: 750
VCD / ACD (IIII): (3.3U0.9U)	- Charge press. hPa: 1000
KSB/AFB	- KSB/ĀFB
valve Volt: 12	- valve Volt: 12
Shutoff	- Shutoff
electromagnet Volt: 12	- electromagnet Volt: 12
4th speed 1/min: 750	- Overflow : 88.90133.40
Charge press hPa: 1000	<ul> <li>quantity cm3/10s: (75.90158.40)</li> </ul>
TD travel mm: 1.902.70 +	- 2nd speed 1/min: 2100
mm: $(1.403.20)$	- Charge press. hPa: 1000
KSB/AFB	- KSB/AFB
valve Volt: 12	- valve Volt: 12
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A02	

Shutoff	+ KSB/AFB
electromagnet Volt: 12	+ valve Volt: 12
Overflow : 97.30180.70	+ Shutoff
quantity cm3/10s: (82.30195.70)	+ electromagnet Volt: 12
Dolaron and brookers, shop	+ Del. quantity cm3/: 61.0066.00
Delivery-quant. and breakaway char.:	1000s.: (59.5067.50)
	+ 18th speed 1/min: 750 + Charge press. hPa: -
1nd speed 1/min: 750*	+ KSB/AFB
Charge-air pressure-setting	+ valve Volt: 12
point hPa: 400	+ Shutoff
LDA-stroke mm: 7.4	+ electromagnet Volt: 12
KSB/AFB valve Volt: 12	+ Del. quantity cm3/: 44.0045.00 + 1000s.: (41.0048.00)
Shutoff	T (41.0040.00)
electromagnet Volt: 12	Mech. shutoff:
Del. quantity cm3/: 63.5064.50	+
1900s.: (60.0068.00)	+ Electr. shutoff:
2nd speed 1/min: 2650	+
Charge press. hPa: 1000 KSB/AFB	1 1st speed 1/min: 450
valve Volt: 12	Del. quantity cm3/: 0.003.00 + 1000s.: (0.003.00)
Shutoff	F Shutoff
	+ electromagnet voit: -
electromagnet Volt: 12 Del. quantity cm3/: 0.003.00	+ KSB/AFB
1000s.: (0.003.00)	+ valve Volt: -
3rd speed 1/min: 2500	+
Charge press. hPa: 1000 KSB/AFB	† Idle delivery:
valve Volt: 12	T 1st speed 1/min: 450
Shutoff	KSB/AFB
	+ valve Volt: 12
electromagnet Volt: 12 Del. quantity cm3/: 17.0023.00	+ Shutoff
1000s.: (14.0026.00)	+ electromagnet Volt: 12
5th speed 1/min: 2400	+ Del. quantity cm3/: 6.0010.00
Charge press. hPa: 1000 KSB/AFB	1000s.: (3.0013.00) Dispersion cm3/: 6.0
valve Volt: 12	1000S.: (6.5)
Shutoff	2nd speed 1/min: 500
electromagnet Volt: 12 Del. quantity cm3/: 30.0034.00	+ KSB/AFB
Del. quantity cm3/: 30.0034.00	+ valve Volt: 12
1000\$.: (26.0038.00)	+ Shutoff
9th speed 1/min: 2100 Charge press. hPa: 1000	+ electromagnet Volt: 12 + Del. quantity cm3/: 0.003.00
KSB/AFB	10008.: (0.003.00)
valve Volt: 12	+ 3rd speed 1/min: 470
Shutoff	+ KSB/AFB
electromagnet Volt: 12	† valve Volt: 12
Del. quantity cm3/: 59.0063.00	+ Shutoff
1000s.: (57.0065.00) 12th speed 1/min: 1750	+ electromagnet Volt: 12
Charge press. hPa: 1000	+ Del. quantity cm3/: 0.006.00 + 10008.: (0.007.00)
KSB/AFB	10000
valve Volt: 12	+ Load-dependent start of delivery:
Shutoff	+ Injqty.dif.measurement:
electromagnet Volt: 12	1 4-1 1 4/1 4500
Del. quyntity cm3/: 62.5063.50	+ 1st speed 1/min: 1500
1000s.: (59.5066.50) 15th speed  1/min: 1500	† Charge press. hPa: - † Injqty. cm3/ : -5.013.0 "
Charge press. hPa: 1000	difference 1000s.: -
and the second of the second o	_ <del></del>

KSB/AFB	+ Shutoff
valve Volt: 12	electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 45.0075.00
electromagnet Volt: 12	1000s.: -
2nd speed 1/min: 1500	<del>-</del>
Charge press. hPa: -	- 3rd speed 1/min: 100
Inj.—qty. cm3/: MAX. difference 10005.: 4.006.00 '	KSB/AFB
difference 1000S.: 4.006.00	valve Volt: 12
KSB/AFB	- Shutoff
valve Volt: 12	electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 55.0085.00
electromagnet Volt: 12	1000S.: (50.0090.00) K
	19000: (90.00:70.207 K
TD-travel dif.measurement:	4th speed 1/min: 100
correttore anticipo injezione (SV):	KSB/AFB
1st speed 1/min: 1500	valve Volt: 12
Charge press. hPa: -	- Shutoff
TD-travel : -0.50.7 "	electromagnet Volt: 12
difference mm: -	Del. quantity cm3/: 31.0033.00
KSB/AFB	1000S.: (25.0040.00) W
valve Volt: 12	10003 (2).0040.007 W
Shutoff	Shutoff electromagnet:
electromagnet Volt: 12	L shatorr etectromagnet.
2nd speed 1/min: 1500	Cut-in
Charge press. hPa: -	min voltage : 10.0
TD-travel : - 0.41.2 '	min voltage : 10.0
TD-travel : - 0.41.2 ' difference mm: -	Rated voltage : 12.0
KSB/AFB	Mountains and accombly dimensions.
valve Volt: 12	Mounting and assembly dimensions:
Shutoff	Dociemation
electromagnet Volt: 12	Designation
etectromagnet vott. 12	K mm: -
	KF mm: K-OT
Part-load dol at 7nd ini	1 MC 0 0
Part-load del.at 3rd injqty.	MS mm: 0.9
Part-load del.at 3rd injqty.  terza fermo della portata	MS mm: 0.9 MS1 mm: 1.18
Part-load del.at 3rd injqty.  terza fermo della portata  stop (EGR set)	MS mm: 0.9 MS1 mm: 1.18 SVS max. mm: 1.4
Part-load del.at 3rd injqty.  terza fermo della portata  stop (EGR set)  scarico) (ARF)	MS mm: 0.9 MS1 mm: 1.18 SVS max. mm: 1.4 LDA stroke mm: 7.4
Part-load del.at 3rd injqty.  terza fermo della portata  stop (EGR set)  scarico) (ARF)  gaz d'échappement-ARF)	MS1 mm: 1.18 SVS max. mm: 1.4 LDA stroke mm: 7.4
Part-load del.at 3rd injqty.  terza fermo della portata  stop (EGR set)  scarico) (ARF)  gaz d'échappement-ARF)  Spacing mm: 12.0	MS mm: 0.9 MS1 mm: 1.18 SVS max. mm: 1.4 LDA stroke mm: 7.4 Ajustement Potentiometer:
Spacing mm: 12.0	f Ajustement Potentiometer:
1st speed 1/min: 1000	Ajustement Potentiometer: Angle for
1st speed 1/min: 1000	Ajustement Potentiometer:  Angle for  pot. °: 12 MM
1st speed 1/min: 1000 KSB/AFB valve Volt: 12	Ajustement Potentiometer:  Angle for  pot.  Supply voltage
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff	Ajustement Potentiometer:  Angle for pot. Supply voltage pot. Volt: 5.0
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12	Ajustement Potentiometer:  Angle for pot. °: 12 MM Supply voltage pot. volt: 5.0 Output volt
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90	Ajustement Potentiometer:  Angle for pot. Supply voltage pot. Volt: 5.0
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12	Ajustement Potentiometer:  Angle for
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000S.: (15.4020.40)	Ajustement Potentiometer:  Angle for pot. °: 12 MM Supply voltage pot. volt: 5.0 Output volt
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90	Ajustement Potentiometer:  Angle for
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000S.: (15.4020.40)  Automatic starting fuel delivery:	Ajustement Potentiometer:  Angle for
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000S.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250	Angle for pot. ": 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each manifold pressure compensator pressure
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12	Angle for pot. ": 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000S.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12 Shutoff	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each manifold pressure compensator pressure change.
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each manifold pressure compensator pressure
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00100.00	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each manifold pressure compensator pressure change.
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks:  Operate control lever after each manifold pressure compensator pressure change.  * Correction at adjusting nut
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00100.00 1000s.: -	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each manifold pressure compensator pressure change.  * Correction at adjusting nut  A = KSB adjustment point
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00100.00 1000s.: -  2nd speed 1/min: 450	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks:  Operate control lever after each manifold pressure compensator pressure change.  * Correction at adjusting nut
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00100.00 1000s.: -  2nd speed 1/min: 450 KSB/AFB	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each manifold pressure compensator pressure change.  * Correction at adjusting nut  A = KSB adjustment point
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00100.00 1000s.: -  2nd speed 1/min: 450	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each manifold pressure compensator pressure change.  * Correction at adjusting nut  A = KSB adjustment point
1st speed 1/min: 1000 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.9018.90 1000s.: (15.4020.40)  Automatic starting fuel delivery:  1st speed 1/min: 250 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00100.00 1000s.: -  2nd speed 1/min: 450 KSB/AFB	Angle for pot. *: 12 MM Supply voltage pot. volt: 5.0 Output volt pot. volt: 2.0  Remarks: Operate control lever after each manifold pressure compensator pressure change.  * Correction at adjusting nut  A = KSB adjustment point

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : 08.03.93 Edition replaces Calibrating oil : ISO-4113 : VE6/12F1250R419-3 : 0\_460\_426\_204 Injection pump Type number Customer Part-No.: 391 3348 Customer-specific information Customer Engine : 6 BTA 59UA KW: 118 1/min: 2500 Power Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil °C return temp. with thermometer: 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder assembly : 1 688 901 109 Opening bar: 207.00...210.00 Pressure Perforated-plate diameter mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length Start of delivery Prestroke mm: -(from BDC): -Start of delivery block Piston stroke mm: 1.25 mm: +-0.02(0.06)Outlet Injection pump setting values Test specifications in parentheses

Timing-device travel Speed 1/min: 1000 Charge press. hPa: 1000 Setting value mm: 1.60...2.00 Shutoff electromagnet Volt: 12 Supply-pump pressure Speed 1/min: 1000 Charge press hPa: 1000 Setting value bar: 6.30...6.90 Shutoff electromagnet Volt: 12 Full-load del. with charge press.: 1/min: 850 Speed Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 84.00...85.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 5.0 1000S.: (5.0) Full-load del. w/out charge press.: 1/min: 500 Del. quantity cm3/ 1000s.: 55.50...56.50 Shutoff electromagnet Volt: 12 Dispersion cm3/: 5.0 1000s.: (6.0) Low-idle speed regulation Speed 1/min: 400 Del. quantity cm3/ 1000s.: 12.00...16.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 5.5 1000s.: (7.0) Full-load speed regulation Speed 1/min: 1325 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 75.00...81.00 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100

Del. quantity cm3/: mind 1000s.:	100.00160.00 100.0	‡	Supply-pump pressure	bar:	3.904.50
Shutoff electromagnet Volt:	12	‡	Shutoff electromagnet	Volt:	12
Inspection-pump tes Test specifications		Ī	Overlow quanti	ty at	overflow valve:
Timing-device chara	cteristic:	<u>†</u>	1st speed 1 Charge press. Shutoff		
TD travel mm:	1000 2.303.10	++	electromagnet Overflow quantity cm3	/10s:	41.7083.40 (26.7098.40)
Shutoff electromagnet Volt:	(2.003.40)	Ī	2nd speed 1 Charge press. Shutoff	hPa:	1000
3rd speed 1/min: Charge press hPa: TD travel mm:	1000 1000	+	electromagnet Overflow	:	12 55.60139.00 (40.60154.00)
Shutoff mm:	(1.102.50)	+			breakaway char.:
electromagnet Volt: 4th speed 1/min: Charge press hPa:	850	İ	1nd speed 1	/min:	700⊶
TD travel mm:	0.801.60 (0.501.90)	Ī	Charge-air pre point		-setting
Shutoff electromagnet Volt: 8th speed 1/min:	12 450	+	LDA-stroke Shutoff	mm:	
Charge press. hPa: TD travel mm:	2.003.00	Ŧ	electromagnet Del. quantity 10	cm3/: 00S.:	66.0067.00 (62.5070.50)
KSB/AFB valve Volt:	(1.803.20)	†	2nd speed 1 Charge press. Shutoff	/min: hPa:	
Shutoff electromagnet Volt:		+	electromagnet Del. quantity	cm3/:	0.003.00
Supply-pump pressur	e characteristic:	‡	3rd speed 1 Charge press.	/min:	
1st speed 1/min: Charge press. hPa: Supply-pump		‡	Shutoff electromagnet Del. quantity	Volt:	12
pressure bar: Shutoff electromagnet Volt:	5.706.30	+	5th speed 1	00s.: /min:	(15.0045.00) 1325
2nd speed 1/min: Charge press. hPa:	1000	Ŧ	Charge press. Shutoff electromagnet	Volt:	12
Supply-pump pressure bar: Shutoff	6.306.90	†	Del. quantity 10 9th speed 1	cm3/: 00s.: /min:	(72.0084.00)
electromagnet Volt: 3rd speed 1/min:	1250	+	Charge press. Shutoff	hPa:	1000
	7.408.00	‡	electromagnet Del. quantity 10	cm3/:	85.5088.50 (84.0090.00)
Shutoff electromagnet Volt:	12	+	10th speed 1 Charge press.	/min:	1050
4th speed 1/min: Charge press. hPa:	1000	+	Shutoff electromagnet	Volt:	12

Del. quantity cm3/: 87.00...90.00 1000S.: (85.00...92.00) 12th speed 1/min: 850 Charge press. hPa: 1000 Shutoff Charge press. hPa: -Shutoff electromagnet Volt: 12 Del. quantity cm3/: 56.50...57.50 1000S.: (53.00...61.00) Mech. shutoff: Mech. Abstellung: 1st speed 1/min: 1250 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: 12 Electr. shutoff: Shutoff electromagnet volt: -Idle delivery: 1st speed 1/min: 400 Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000S.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 130 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 110.00...170.00 1000s.: (110.00...170.00) 2nd speed 1/min: 240 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 50.00...80.00 1000s.: (50.00...80.00)

4th speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 100.00...160.00 1000S.: (100.00...160.00)

### Shutoff electromagnet:

Cut-in min voltage : 20.0 Rated voltage : 24.0

## Mounting and assembly dimensions:

Remarks: Operate control lever after each manifold-pressure compensator pressure change.

\* Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 1000 Speed Charge press. hPa: 1000 Note inst. in remarks column Setting value Shutoff mm: 1.60...2.00 Test scheet : CDC electromagnet Volt: 12 : 08.03.93 Edition replaces Supply-pump pressure Calibrating oil : ISO-4113 Speed 1/min: 1000 Charge press hPa: 1000 Setting value bar: 6.30...6.90 Injection pump : VE6/12F1250R419-4 : 0 460 426 205 Type number Customer Part-No. Shutof1 electromagnet Volt: 12 Customer-specific information Full-load del. with charge press.: Customer 1/min: 850 Engine : 6 BTA 590A Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 85.00...86.00 TEST BENCH REQUIREMENTS Shutoff electromagnet Volt: 12 Dispersion cm3/: 5.0 Overflow restricti: 1 463 456 303 Calibrating-oil 1000s.: (5.0) return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 56.50...57.50 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder Shutoff : 1 688 901 109 electromagnet Volt: 12 Dispersion cm3/: 5.0 assembly 1000S.: (6.0) Opening. bar: 207.00...210.00 Pressure Low-idle speed regulation Perforated plate mm: 0.5 diameter 1/min: 400 Speed Del. quantity cm3/ 1000S.: 12.00...16.00 Test inj. tubing : 1 680 750 017 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 5.5 1000S.: (7.0) Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840 Full-load speed regulation Start of delivery Prestroke mm: -1/min: 1325 Speed (from BDC): -Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 75.00...81.00 Start of delivery block Piston stroke mm: 1.25 Shutoff mm: +0.02(0.06)electromagnet Volt: 12 Outlet Start: Injection-pump setting values Speed 1/min: 100 Del. quantity cm3/: 100.00...160.00 mind 1000s.: 100.0 Test specifications in parentheses Timing-device travel

Shutoff electromagnet Volt:	12	Shutoff electromagnet Volt:	12
Inspection-pump tes Test specifications	t specifications I	Overlow quantity at	overflow valve:
Timing-device chara	<u> </u>	1st speed 1/min: Charge press. hPa:	
TD travel mm:	1000 2.303.10 (2.003.40)	<pre>guantity cm3/10s: 2nd speed 1/min: Charge press. hPa:</pre>	41.7083.40 (26.7098.40) 1250
3rd speed 1/min: Charge press hPa: TD travel mm:	1000 1000 1.602.00 (1.102.50)	quantity cm3/10s:	55.60139.00 (40.60154.00)
Shutoff electromagnet Volt: 4th speed 1/min:	12 850	Delivery-quant. and	breakaway char.:
Charge press hPa: TD travel mm:	1000 0.801.60 (0.501.90)	1nd speed 1/min: Charge-air pressure point hPa:	-setting 230
Shutoff electromagnet Volt: 8th speed 1/min: Charge press. hPa:	450 +	LDA-stroke mm: Shutoff electromagnet Volt: Del. quantity cm3/:	7.0 12 66.0067.00
TD travel mm:	2.003.00 (1.803.20)	1000s.: 2nd speed 1/min: Charge press. hPa:	(62.5070.50) 1480
valve Volt: Shutoff	+	Shutoff electromagnet Volt:	12
electromagnet Volt: Supply-pump pressure	<del> </del>	3rd speed 1/min:	(0.003.00) 1430
	850 1000	Charge press. hPa: Shutoff electromagnet Volt:	12
Shutoff	5.706.30	5th speed 1/min:	(15.0045.00) 1325
electromagnet Volt: 2nd speed 1/min: Charge press. hPa: Supply-pump	1000	Charge press. hPa: Shutoff electromagnet Volt: Del. quantity cm3/:	12
pressure bar: Shutoff electromagnet Volt:	6.306.90	9th speed 1/min: Charge press. hPa:	(72.0084.00) 1250
3rd speed 1/min: Charge press. hPa: Supply-pump	1250	Shutoff electromagnet Volt: Del. quantity cm3/:	12 85.5088.50
Shutoff electromagnet Volt:	7.408.00	10th speed 1/min: Charge press. hPa:	(84,0090,00) 1055 1000
4th speed 1/min: Charge press. hPa: Supply-pump	1000	Shutoff electromagnet Volt: Del. quantity cm3/:	87.0090.00
pressure bar:	3.904.50	1000S.: 12th speed 1/min:	(85.0092.00) 850

Charge press. hPa: 1000 Shutoff electromagnet Volt: 12 Del. quyntity cm3/: 85.00...86.00 1000S.: (82.50...88.50) 18th speed 1/min: 500 Charge press. hPa: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 56.50...57.50 1000s.: (53.00...61.00) Mech. shutoff: Mech. Abstellung: 1st speed 1/min: 1250 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: 12 Electr. shutoff: 1st speed 1/min: 400
Del. quantity cm3/: 0.00...3.00
1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1st speed 1/min: 400 Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 130 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 110.00...170.00 1800S.: (110.00...170.00) 2nd speed 1/min: 240 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 50.00...80.00 1000s.: (50.00...80.00) 4th speed 1/min: 100

Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 100.00...160.00
1000S.: (100.00...160.00)

Shutoff electromagnet:

Cut-in
 min voltage : 10.0
Rated voltage : 12.0

Mounting and assembly dimensions:

Remarks: Operate control lever after each 3346 manifold-pressure compensator pressure change.

\* Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 08.03.93 replaces Calibrating oil : ISO-4113 : VE6/12F1250R498 Injection pump : 0 460 426 211 Type number Customer Part-No. : Customer-specific information Customer : CDC : 6 BTAA 5.9B Engine KW: 118 Power 1/min: 2500 Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 109 assembly Openina | bar: 207.00...210.00 Pressure Perforated plate diameter mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840 Start of delivery Prestroke mm: -(from BDC): -Start of delivery block Piston stroke mm: 1,4 mm: +0,02(0,06)Outlet Injection-pump setting values

A12

Test specifications in parentheses Timing-device travel Speed 1/min: 1000 Charge press. hPa: 1000 Setting value mm: 1.50...1.90 Shutoff electromagnet Volt: 24 Supply-pump pressure 1/min: 1000 Speed Charge press hPa: 1000 Setting value bar: 6.30...6.90 Shutoff electromagnet Volt: 24 Full-load del. with charge press.: Speed 1/min: 850 Charge press. hPa: 1000 1/min: 850 Del. quantity cm3/ 1000s.: 84.00...85.00 Shutoff electromagnet Volt: 24 Dispersion cm3/: 5.0 1000s.: (5.0) Full-load del. w/out charge press.: Speed 1/min: 500 Del. quantity cm3/ 1000s.: 69.50...70.50 Shutoff electromagnet Volt: 24 Dispersion cm3/: 5.0 1000s.: (6.0) Low-idle speed regulation Speed 1/min: 350 Del. quantity cm3/ 1000s.: 6.00...10.00 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000S.: (7.0) Full-load speed regulation Speed 1/min: 1380 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 57.50...63.50 Shutoff electromagnet Volt: 24 Start:

Speed 1/min: Del. quantity cm3/: mind 1000S.:	100 100.00160.00 100.0	†	Supply-pump pressure bar: Shutoff	3.904.50
Shutoff electromagnet Volt:		1	electromagnet Volt:	24
Inspection-pump tes Test specifications		‡	Overlow quantity at	
Test specifications Timing-device chara		‡	1st speed 1/min: Charge press. hPa: Shutoff	
2nd speed 1/min:		1	electromagnet Volt: Overflow :	24 41.70 83.40
Charge press hPa: TD travel mm:	1000	+	quantity cm3/10s: 2nd speed 1/min: Charge press. hPa:	(26.7098.40) 1250
Shutoff electromagnet Volt:	24	+	Shutoff electromagnet Volt:	
3rd speed 1/min: Charge press hPa:	1000	†	Overflow : quantity cm3/10s:	55.60139.00
Shutoff	(1.002.40)	I	belivery-quant. and	breakaway char.:
electromagnet Volt: 7.Rotação 1/min:		1	1nd speed 1/min:	600*
Charge press. hPa:		‡	Charge-air pressure point hPa:	-setting
Shutoff	-	‡	LDA-stroke mm: Shutoff	
electromagnet Volt: 8th speed 1/min:	450	‡	electromagnet Volt: Del. quantity cm3/: 1000s.:	24 76.0077.00
Charge press. hPa: TD travel mm:	2.003.00	‡	2nd speed 1/min:	1485
KSB/AFB	(1.803.40)	‡	Charge press. hPa: Shutoff	
valve Volt: Shutoff		‡	electromagnet Volt: Del. quantity cm3/:	0.003.00
electromagnet Volt:		‡	1000s.: 3rd speed 1/min:	(0.003.00) 1465
Supply-pump pressur		‡	Charge press. hPa: Shutoff	
1st speed 1/min: Charge press. hPa: Supply-pump	1000	‡	electromagnet Volt: Del. quantity cm3/: 1000s.:	10.0030.00 (10.0030.00)
pressure bar: Shutoff	5.906.50	‡	5th speed 1/min: Charge press. hPa:	1380
electromagnet Volt: 2nd speed 1/min:	1000	‡	Shutoff electromagnet Volt:	24
Supply-pump	1000 6.306.90	†	Del. quantity cm3/: 1000s.: 9th speed 1/min:	(54.5066.50)
pressure bar: Shutoff electromagnet Volt:		Ŧ	Charge press. hPa:	1000
3rd speed 1/min:	1250 1000	Ŧ	Shutoff electromagnet Volt:	24
Supply-pump	7.307.90	Ī	Del. quantity cm3/: 1000S.:	(80.5086.50)
Shutoff electromagnet Volt:		I	10th speed 1/min: Charge press. hPa: Shutoff	1000
4th speed 1/min: Charge press. hPa:	500_	Ŧ	electromagnet Volt:	24

Del. quantity cm3/: 83.50...86.50 1000s.: (81.50...88.50) 12th speed 1/min: 850 Charge press. hPa: 1000 Shutoff electromagnet Volt: 24
Del. quyntity cm3/: 84.00...85.00
1000S.: (81.50...87.50)
18th speed 1/min: 500 Charge press. hPa: -Shutoff electromagnet Volt: 24 Del. quantity cm3/: 69.50...70.50 1000S.: (66.00...74.00) Mech. shutoff: Mech. Abstellung: 1st speed 1/min: 1250 Del. quantity cm3/: 0.00...3.00 1300s.: (0.00...3.00) Shutoff electromagnet volt: 24 Electr. shutoff: 1/min: 350 1st speed Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1/min: 350 1st speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 6.00...10.00 1000s.: (3.00...13.00) Dispersion cm3/: 5.5 1000s.: (7.0) 2nd speed 1/min: 410 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1000S.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 130 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 110.00...170.00 1000s.: (110.00...170.00) 2nd speed 1/min: 240 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 60.00...90.00 1000S.: (60.00...90.00)

4th speed 1/min: 100 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 100.00...160.00 1000S.: (100.00...160.00)

### Shutoff electromagnet:

Cut-in min voltage : 20.0 Rated voltage : 24.0

# Mounting and assembly dimensions:

Designation	
K	mm: 3.63.8
KF	mm: K-OT
MS1	mm: 1.19-1.44
SVS max.	mm: 3.7
LDA stroke	am: 6.2
Ya	mm: 34.838.8
Yb	mm: 43.649.2

#### Remarks:

Operate control lever after each manifold-pressure compensator pressure charge.

\* Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : CUM : 08.03.93 replaces Calibrating oil : ISO-4113 : VE6/12F1250R498-1 Injection pump : 0 460 426 212 Type number Customer Part-No. Customer-specific information Customer : CDC Engine : 6 BTAA 5.9B Power KW: 96 1/min: 2500 Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating oil return temp. with thermsometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 109 assembly Opening Pressure bar: 207.00...210.00 Perforated-plate diameter mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall thickness : 2.00 x Length Start of delivery Prestroke mm: -(from BDC): -Start of delivery block Piston stroke mm: 1,15 mm: +0.02(0.06) Outlet Injection-pump setting values

A15

Test specifications in parentheses Timing-device travel Speed 1/min: 1000 Charge press. hPa: 1000 Setting value mm: 1.50...1.90 Shutoff electromagnet Volt: 24 Supply-pump pressure Speed 1/min: 1000 Charge press hPa: 1000 Setting value bar: 6.30...6.90 Shutoff electromagnet Volt: 24 Full-load del. with charge press.: Speed 1/min: 850 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 71.50...72.50 Shutoff electromagnet Volt: 24 Dispersion cm3/: 5.0 1000s.: (5.0) Full-load del. w/out charge press.: Speed 1/min: 500 Del. quantity cm3/ 1000s.: 59.50...60.50 Shutoff electromagnet Volt: 24 Dispersion cm3/: 5.0 10008.: (6.0) Low-idle speed regulation Speed 1/min: 350 Del. quantity cm3/ 1000S.: 11.00...15.00 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000S.: (7.0) Full-load speed regulation Speed 1/min: 1400 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 42.00...48.00 electromagnet Volt: 24 Start:

Speed 1/min: Del. quantity cm3/: mind 1000s.:	100 100.00160.00	‡		3.904.50
shutoff electromagnet Volt:		İ	Shutoff electromagnet Volt:	24
Inspection pump tes		<u>†</u>	Overlow quantity at	overflow valve:
Test specifications	in parentheses	+	1st speed 1/min: Charge press. hPa:	
Timing-device chara	cteristic:	‡	Shutoff electromagnet Volt:	24
TD travel mm:	1000	+ + + + + + + + + + + + + + + + + + + +	Overflow: quantity cm3/10s: 2nd speed 1/min: Charge press. hPa:	41.7083.40 (26.7098.40) 1250
Shutoff electromagnet Volt:		‡	Shutoff electromagnet Volt:	
3rd speed 1/min: Charge press hPa: TD travel mm:	1000 1000	<u>†</u>	Overflow : quantity cm3/10s:	55.60,139.00
Shutoff	(1.002.40)	+	Delivery-quant. and	breakaway char.
electromagnet Volt:	24	Ŧ	and made	<b>(20)</b>
4th speed 1/min: Charge press hPa: TD travel mm:	1000 0.501.30	Ţ	1nd speed 1/min: Charge-air pressure- point hPa:	-setting
Shutoff mm:	(0.201.60)	‡	LDA-stroke mm: Shutoff	
electromagnet Volt: 8th speed 1/min:	450	‡	electromagnet Volt: Del. quantity cm3/:	68.0069.00
Charge press. hPa: TD travel mm:	2.003.00	‡	2nd speed 1/min:	
KSB/AFB	(1,803.20)	Ī	Charge press. hPa: Shutoff	1000
valve Volt: Shutoff	24	<u>†</u>	electromagnet Volt: Del. quantity cm3/:	24
electromagnet Volt:	24	<u> </u>	1000s.: 3rd speed 1/min:	(0.003.00)
Supply-pump pressur		+	Charge press. hPa: Shutoff	1000
1st speed 1/min: Charge press. hPa: Supply-pump		‡	electromagnet Volt: Del. quantity cm3/:	24 15.0045.00 (15.0045.00)
pressure bar: Shutoff	5.706.30	I +	5th speed 1/min: Charge press. hPa:	1400
electromagnet Volt: 2nd speed 1/min:		<u> </u>	Shutoff electromagnet Volt:	
	1000	<u> </u>	Del. quantity cm3/:	42.0048.00
pressure bar: Shutoff	6.306.90	‡	9th speed 1/min: Charge press. hPa:	(39.0051.00) 1250 1000
electromagnet Volt: 3rd speed 1/min:	24 1250	<u> </u>	Shutoff electromagnet Volt:	
	1000	+	Del. quantity cm3/:	73.0077.00 (72.0078.00)
	7.207.80	‡	10th speed 1/min: Charge press. hPa:	1100
electromagnet Volt: 4th speed 1/min: Charge press. hPa:	500	+	Shutoff electromagnet Volt:	
		-		

Del. quantity cm3/: 72.50...75.50 1000\$.: (70.50...77.50) 1/min: 850 12th speed Charge press. hPa: 1000 Shutoff electromagnet Volt: 24
Del. quyntity cm3/: 71.50...72.50
1000S.: (69.00...75.00)
18th speed 1/min: 500 Charge press. hPa: -Shutoff electromagnet Volt: 24 Del. quantity cm3/: 59.50...60.50 1000S.: (56.00...64.00) Mech. shutoff: Mech. Abstellung: 1st speed 1/min: 1250 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: 24 Electr. shutoff: 1st speed 1/min: 350
Del. quantity cm3/: 0.00...3.00
1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1st speed Shutoff 1/min: 350 electromagnet Volt: 24

Del. quantity cm3/: 11.00...15.00

1000S.: (8.00...18.00)

Dispersion cm3/: 5.5 1000s.: (7.0) 1/min: 400 2nd speed Shutoff electromagnet Volt: 24
Del. quantity cm3/: 0.00...3.00
1000S.: (0.00...3.00) Automatic starting fuel delivery: 1st speed 1/min: 130 Shutoff electromagnet Volt: 24
Del. quantity cm3/: 110.00...170.00
1000S.: (110.00...170.00) 2nd speed 1/min: 200 Shutoff electromagnet Volt: 24
Del. quantity cm3/: 55.00...85.00
1000S.: (55.00...85.00)

4th speed 1/min: 100 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 100.00...160.00 1000S.: (100.00...160.00)

Shutoff electromagnet:

Cut-in min voltage : 20.0 Rated voltage : 24.0

Mounting and assembly dimensions:

Remarks:

Operate control lever after each manifold pressure compensator pressure change.

\* Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 08.03.93 replaces Calibrating oil : 180-4113 Injection pump : VE6/12F1250R498-2 Type number : 0 460 426 213 Customer Part-No. : Customer-specific information Customer Engine : 6 BTA 5.9B Power KW: 106 1/min: 2500 Speed TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating oil return temp. with thermometer : 40.00...48.00 : 42.00...50.00 Electronically Inlet press., bar: 0.30...0.40 Calibrating nozzle holder : 1 688 901 109 assembly Opening | bar: 207.00...210.00 Pressure Perforated-plate mm: 0.5 diameter Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length Start of delivery Prestroke mm: -(from BDC): -Start of delivery block mm: 1.20 Piston stroke mm: +0.02(0.06)Outlet Injection-pump setting values

A18

Test specifications in parentheses Timing-device travel 1/min: 1000 Speed Charge press. hPa: 1000 Setting value mm: 1.90...2.30 electromagnet Volt: 24 Supply-pump pressure Speed 1/min: 1000 Charge press hPa: 1000 Setting value bar: 6.30...6.90 Shutoff electromagnet Volt: 24 Full-load del. with charge press.: Speed 1/min: 850 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 82.50...83.50 Shutoff electromagnet Volt: 24 Dispersion cm3/: 5.0 1000s.: (5.0) Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 67.00...68.00 Shutoff electromagnet Volt: 24 Dispersion cm3/: 5.0 1000s.: (6.0) Low-idle speed regulation 1/min: 350 Speed Del. quantity cm3/ 1000s.: 11.00...15.00 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000S.: (7.0) Full-load speed regulation 1/min: 1350 Speed Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 55.00...61.00 Shutoff electromagnet Volt: 24 Start:

Speed 1/min: 100 Del. quantity cm3/: 100.00...160.00 mind 1000S.: 100.0 Supply-pump pressure bar: 3.90...4.50 Shutoff Shutoff electromagnet Volt: 24 electromagnet Volt: 24 Overlow quantity at overflow valve: Inspection-pump test specifications Test specifications in parentheses 1st speed 1/min: 500 Charge press. hPa: Shutoff Timing-device characteristic: electromagnet Volt: 24 1/min: 1250 2nd speed Overflow : 41.70...83.40 hPa: 1000 mm: 2.40...3.20 mm: (2.10...3.50) cm3/10s: (26.70...98.40) 1/min: 1250 Charge press quantity o TD travel Charge press. hPa: 1000 Shutoff Shutoff electromagnet Volt: 24 Overflow : 55.60...139.00 quantity cm3/10s: (40.60...154.00) electromagnet Volt: 24 3rd speed 1/min: 1000 Charge press hPa: 1000 mm: 1.90...2.30 mm: (1.40...2.80) TD travel Delivery-quant. and breakaway char.: Shutoff electromagnet Volt: 24
4th speed 1/min: 850
Charge press hPa: 1000
TD travel mm: 0.60...1.40
mm: (0.30...1.70) 1nd speed 1/min: 600\* Charge-air pressure-setting point LDA-stroke hPa: 450 mm: 4.0 Shutoff Shutoff electromagnet Volt: 24
Del. quantity cm3/: 73.00...74.00
1000S.: (69.50...77.50)
2nd speed 1/min: 1460
Charge press. hPa: 1000
Shutoff electromagnet Volt: 24 8th speed 1/min: 450 Charge press. hPa: mm: 2.00...3.00 mm: (1,80...3.20) TO travel KSB/AFB electromagnet Volt: 24
Del. quantity cm3/: 0.00...3.00
1000S.: (0.00...3.00)
3rd speed 1/min: 1425
Charge press. hPa: 1000
Shutoff valve Volt: 24 Shutoff electromagnet Volt: 24 Supply-pump pressure characteristic: electromagnet Volt: 24
Del. quantity cm3/: 15.00...45.00
1000S.: (15.00...45.00)
5th speed 1/min: 1350 1st speed 1/min: 850 Charge press. hPa: 1000 Supply-pump bar: 5.70...6.30 pressure Shutoff Charge press. hPa: 1000 Shutoff electromagnet Volt: 24 2nd speed 1/min: 1000 Charge press. hPa: 1000 electromagnet Volt: 12
Del. quantity cm3/: 55.00...61.00
1000S.: (52.00...64.00)
9th speed 1/min: 1250
Charge press. hPa: 1000
Shutoff Supply-pump bar: 6.30...6.90 pressure Shutoff electromagnet Volt: 24
3rd speed 1/min: 1250
Charge press. hPa: 1000
Supply-pump
pressure bar: 7.20 electromagnet Volt: 24
Del. quantity cm3/: 77.00...81.00
1000S.: (76.00...82.00)
10th speed 1/min: 1100
Charge press. hPa: 1000
Shutoff bar: 7.20...7.80 Shutoff electromagnet Volt: 24 4th speed 1/min: 500 electromagnet Volt: 24 Charge press. hPa: 1000

Del. quantity cm3/: 80.00...83.00 1000\$.: (78.00...85.00) 1/min: 850 12th speed Charge press. hPa: 1000 Shutoff electromagnet Volt: 24 Del. quyntity cm3/: 82.50...83.50 1000\$.: (80.00...86.00) 1/min: 500 18th speed Charge press. hPa: Shutoff electromagnet Volt: 24 Del. quantity cm3/: 67.00...68.00 1000S.: (63.00...71.50) Mech. shutoff: Mech. Abstellung: 1st speed 1/min: 1250 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: 24 Electr. shutoff: 1st speed 1/min: 350 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1st speed 1/min: 350 Shutoff 1/min: 400 2nd speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: 1/min: 130 1st speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 85.00...145.00 1000S.: -2nd speed 1/min: 200 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 55.00...85.00 1000s.: (55.00...85.00)

4t speed 1/min: 100
Stattoff
electromagnet Volt: 24
Del. quantity cm3/: 70.00...130.00
Shutoff electromagnet:

Cut-in min voltage : 20.0 Rated voltage : 24.0

Mounting and assembly dimensions:

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

\* Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : REN : 03.03.93 : 03.12.91 Edition replaces Calibrating oil : ISO-4113

: VE4/8F2300R317-2 Injection pump Type number : 0 460 484 030

Customer Part-No.

Customer-specific information Customer

Engine : F8Q - 706

TEST BENCH REQUIREMENTS

Calibrating oil

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Openina

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450 x Length

Start of delivery Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 1250 Speed

Setting value mm: 4.10...4.50

Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1250 Speed

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Setting value bar: 4.50...5.10

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250 Speed

Del. quantity cm3/ 1000s.: 31.00...32.00

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (3.0)

Low-idle speed regulation

1/min: 410 Speed

Del. quantity cm3/ 1000s.: 6.50...10.50

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000S.: (3.0)

Residual-Delivery Setting

1/min: 500 Speed

Del. quantity cm3/ 1000s.: 1.00...5.00

Shutoff

electromagnet Volt: 12

Full-load speed regulation

1/min: 2450 Speed

Del. quantity cm3/ 1000s.: 22.00...28.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 40.00...70.00 mind 1000s.: 40.00

mind

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

1/min: 1250 Speed

Inj.-qty. cm3/difference 1000s.: - 7.70...9.70 #

Shutoff

electromagnet Volt: 12 SP press.-dif.measurement pompa di mandata (FP)

1.Speed 1/min: 1250

Supply pump	1
pressure	1 1st speed 1/min: 750
difference bar: - 0.10.30 #	+ Shutoff
Shutoff	+ electromagnet Volt: 12
electromagnet Volt: 12	+ Overflow : 41.7083.40 + guantity cm3/10s: (26.7098.40)
The second secon	f guantity cm3/10s: (26.7098.40)
Inspection-pump test specifications	The speed 1/min: 2250
Test specifications in parentheses	Shutoff
Timing-device characteristic:	+ electromagnet Volt: 12
mining-device characteristic:	+ Overflow : 55.60139.00
2nd speed 1/min: 2000	quantity cm3/10s: (40.60154.00)
TD travel mm: 7.408.20	I Dalivamenum and broaks way shan .
mm; (7.108.50)	Delivery-quant. and breakaway char.:
Shutoff	I
electromagnet Volt: 12	1 2nd speed 1/min: 2950
3rd speed 1/min: 1250	+ Shutoff
TD travel mm: 4.104.50	+ electromagnet Volt: 12
mm: (3.605.00)	+ Del. quantity cm3/: 0.005.00
Shutoff	+ 1000s.: (0.005.00)
electromagnet Volt: 12	+ 3rd speed 1/min: 2650
4th speed 1/min: 750	+ Shutoff
TD travel mm: 1.702.50	+ electromagnet Volt: 12
mm: (1.402.80)	+ Del. quantity cm3/: 7.0015.00
Shutoff	+ 1000s.: (6.0016.00)
electromagnet Volt: 12	+ 5th speed 1/min: 2450
8th speed 1/min: 500	+ Shutoff
TD travel mm: 1.904.30 B	+ electromagnet Volt: 12
mm: (1.904.30)	+ Del. quantity cm3/: 22.0028.00
KSB/AFB	1000\$.: (21.0029.00)
valve Volt: 12	+ 9th speed 1/min: 2250
Shutoff	+ Shutoff
electromagnet Volt: 12 9th speed	+ electromagnet Volt: 12
9th speed	+ Del. quantity cm3/: 31.5033.50
mm: (0.603.00)	1000s.: (30.2034.80) 10th speed 1/min: 2000
KSB/AFB	+ 10th speed 1/min: 2000 + Shutoff
valve Volt: 12	+ electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 30.3032.30
electromagnet Volt: 12	+ 1000s.: (29.0033.60)
	+ 11th speed 1/min: 1625
Supply-pump pressure characteristic:	+ Shutoff
1st speed 1/min: 750	+ electromagnet Volt: 12 + Del. quantity cm3/: 29.7032.70
Supply-pump	+ 1000\$.: (28.9033.50)
pressure bar: 3.103.70	+ 12th speed 1/min: 1250
Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
2nd speed 1/min: 1250	+ Del. quyntity cm3/: 31.0032.00
Supply-pump	+ 1000s.: (29.2033.80)
pressure bar: 4.505.10	+ 20th speed 1/min: 750
Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
3rd speed 1/min: 2000	+ Del. quantity cm3/: 30.1033.10
Supply-pump pressure bar: 6.407.00	† 1000s.: (29.3033.90)
Shutoff	Mech. shutoff:
electromagnet Volt: 12	I meen. shutuir.
O COVER ORINGER FOLLS IL	Flectr. shutoff:
Overlow quantity at overflow valve:	Licetti, Shutoff.
THE CON MUNICIPY OF DACITION AGENCY	1

1st speed 1/min: 410 Del. quantity cm3/: 0.003.00	+ 1st speed 1/min: 1250 + Supply pump-
1000s.: (0.003.00) Shutoff electromagnet volt: -	pressure : - 0.20.6 ' difference bar: - Shutoff
Damper set qty.:	electromagnet Volt: 12
LFG-setting:	Automatic starting fuel delivery:
solidale con carcassa: Idle delivery:	1st speed 1/min: 210 Shutoff
1st speed 1/min: 410 Shutoff	+ electromagnet Volt: 12 - Del. quantity cm3/: 45.0075.00 1000S:: (45.0075.00)
electromagnet Volt: 12 Del. quantity cm3/: 6.5010.50 1000s.: (4.5012.50)	2nd speed 1/min: 310 Shutoff electromagnet Volt: 12
High Idle:	Del. quantity cm3/: 15.0045.00 1000s.: (15.0045.00)
1st speed 1/mi: 500 Shutoff	+ 4th speed 1/min: 100
electromagnet Volt: 12 Del. quantity cm3/: 7.0011.00 1000s.: (5.0013.00)	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.0070.00 10008: (40.0070.00)
Residual:	Shutoff electromagnet:
1.Rotacao 1/min: 500 Shutoff	- Cut-in
electromagnet Volt: 12 Del. quantity cm3/: 1.005.00 1000s.: (1.005.00)	min voltage : 10.0 Rated voltage : 12.0
Load-dependent start of delivery:	Mounting and assembly dimensions:
Injqty.dif.measurement:	Designation K mm: 3.23.4
1st speed	+ KF mm: 5.35.7 + MS mm: 1.11.5 + SVS max. mm: 1.8
Shutoff electromagnet Volt: 12	+ Ya mm: 32.636.6 + Yb mm: 65.779.3
2nd speed 1/min: 1250 Injqty. cm3/: + 2.08.0	Remarks:
difference 1000s.: - Shutoff	+ : + A = KSB adjustment point
electromagnet Volt: 12	B = KSB curve point
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed  1/min: 1250 TD-travel : -0.300.50 "	† † † <del>†</del>
difference mm: - Shutoff electromagnet Volt: 12	<u>†</u>
2nd speed	1 1 1
SP pressdif.measurement: pompa di mandata (FP):	‡
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BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet : VWW

Edition : 15.03.93

replaces

Calibrating oil : ISO-4113

: VE4/8F2300R430 Injection pump

Type number : 0 460 484 046

Customer Part-No. :

Customer-specific information

Customer

Engine : 1.9L. A3

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil

return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 000 assembly

Opening

bar: 147.00...150.00 Pressure

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00

mm: 840 x Length

Start of delivery

Prestroke mm: -(from BDC): -

Injection-pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250 Setting value mm: 3.00...5.00

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1250 Setting value bar: 4.90...5.70 Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250

Del. quantity cm3/ 1000s.: 35.5...36.5

Shutoff

electromagnet Volt: 12.0 Dispersion cm3/: 2.0 1000S.: (3.0)

Low-idle speed regulation

Speed 1/min: 450

Del. quantity cm3/ 1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12.0 Del. quantity cm3/: 2.0 1000S.: (3.0)

Residual-Delivery Setting

1/min: 550 Speed

Del. quantity cm3/ 1000s.: 5.50...6.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed 1/min: 2600

Del. quantity cm3/ 1000s.: 10.00...14.00

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 35.00...61.00 mind 1000s.: 35.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1250 Charge press hPa: 12

Inj.-qty. cm3/ difference 1000S.: - 4.50...10.5 \*

Shutoff

electromagnet Volt: 12 SP press.-dif.measurement

pompa di mandata (FP)

1.Speed 1/min: 1250	1
Supply pump	+
pressure difference bar: -0.100.30*	+ 2nd speed 1/min: 2800 + Shutoff
Shutoff	+ electromagnet Volt: 12
electromagnet Volt: 12	+ Del. quantity cm3/: 0.003.00 + 1000s.: -
Inspection pump test specifications Test specifications in parentheses	fragments of the following fragments of the foll
Timing-device characteristic:	electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00
2nd speed 1/min: 2000	1000S.: (8.0016.00) + 8th speed 1/min: 2500
TD travel mm: 7.309.30	+ Shutoff
Shutoff	+ electromagnet Volt: 12 + Del. quantity cm3/: 18.0028.00
electromagnet Volt: 12	† 1000S.: (17.0029.00)
3rd speed	+ 9th speed 1/min: 2200 + Shutoff
mm: -	+ electromagnet Volt: 12
Shutoff electromagnet Volt: 12	† Del. quantity cm3/: 31.5033.50 † 1000s.: (30.3034.70)
4th speed 1/min: 750	† 12th speed 1/min: 1250
TD travel mm: 0.302.30	+ Shutoff
Shutoff	+ electromagnet Volt: 12 + Del. quyntity cm3/: 35.5036.50 + 1000s.: (33.8038.20)
electromagnet Volt: 12	1000\$.: (33.8038.20)
Supply-pump pressure characteristic:	15th speed 1/min: 750 Shutoff electromagnet Volt: 12
1st speed 1/min: 750	+ electromagnet Volt: 12 + Del. quantity cm3/: 30.5033.50
Supply-pump pressure bar: 3.504.30	10005: (29.0035.00) 20th speed 1/min: 400
Shutoff	+ Shutoff
electromagnet Volt: 12 2nd speed	+ electromagnet Volt: 12
Supply-pump	+ Del. quantity cm3/: 31.5036.50 + 1000s.: (29.0039.00)
pressure bar: 4.905.70	t Mark about 66
Shutoff electromagnet Volt: 12	+ Mech. shutoff:
3rd speed 1/min: 2200	+ Electr. shutoff:
Supply-pump pressure bar: 7.608.40	1st speed 1/min: 450
Shutoff	+ Del. quantity cm3/: 0.003.00
electromagnet Volt: 12	† 1000s.: -
Overlow quantity at overflow valve:	Damper set qty.:
1st speed 1/min: 400	+ LFG-setting:
Shutoff electromagnet Volt: 12	<pre>+ solidale con carcassa: + Idle delivery:</pre>
Overflow : 41.7083.40	+
quantity cm3/10s: (27.8097.30) 2nd speed	1st speed 1/min: 450
Shutoff	+ Shutoff + electromagnet Volt: 12
electromagnet Volt: 12	+ Del. quantity cm3/: 7.009.00 + 1000s.: (4.0012.00)
Overflow : 55.60152.90 quantity cm3/10s: (41.70166.80)	† TUUUS.: (4.0012.00)
	+ High Idle:
Delivery-quant. and breakaway char.:	<b>†</b>

1/mi: 525 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.00...9.00 1000S.: (4.00...12.00) Residual: 1/min: 550 1.Rotacao Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.00...8.00 1000s.: (4.50...9.50) Load-dependent start of delivery: Inj.-qty.dif.measurement: Shutoff electromagnet Volt: 12. TD-travel dif.measurement: correttore anticipo iniezione (SV): 1/min: 1250 1st speed : -1.3...2.30 # TD-travel difference mm: -Shutoff electromagnet Volt: 12 SP press.-dif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 1st speed Supply pumppressure : -0.7...1.50 # Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1/min: 180 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...69.00 1000s.: (35.00...69.00) 2nd speed 1/min: 380 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 18.00...38.00 1000S.: (18.00...38.00) 1/min: 100 4th speed

Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.00...61.00 1000s.: (35.00...61.00) Shutoff electromagnet: Cut-in : 10.0 min voltage Rated voltage : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 mm: 5.1...5.5 mm: 1.2...1.4 KF MS SVS max. mm: -Remarks: Following pump adjustment, screw out residual-quantity adjusting screw 2 mm. On initial measurement, screw in residual-quantity adjusting screw 2 mm. BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet

: REN

Edition replaces 03.03.93

Calibrating oil

: 13.04.92 : ISO-4113

Injection pump

: VE4/8F2300R425-1

Type number

: 0 460 484 054

Customer Part-No. :

Customer-specific information

Customer

: PSA

Engine

: XUD9AL Peug. D70

TEST BENCH REQUIREMENTS

Calibrating-oil

return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly

: 1 688 901 022

Openina

bar: 130.00...133.00 Pressure

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00

x Wall thickness : 2.00 x Length mm: 450

x Length

Start of delivery

Prestroke

mm: -

(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing-device travel

Speed

1/min: 1250

Setting value mm: 3.50...3.90

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed

1/min: 1250

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Setting value bar: 5.70...6.30 Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

Speed

1/min: 1250

Del. quantity cm3/ 1000s.: 29.70...30.70

Shutoff

electromagnet Volt: 12.0

Dispersion

cm3/: 2.0

1000s.: (3.0)

Low-idle speed regulation

Speed

1/min: 375

Del. quantity cm3/ 1000s.: 9,50...11.50

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000S.: (3.0)

Residual-Delivery Setting

Speed

1/min: 500

Del. quantity cm3/ 1000S.: 2.50...3.50

Shutoff

electromagnet Volt: 12

Full-load speed regulation

Speed

1/min: 2650

Del. quantity cm3/ 1000s.: 9.00...13.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 42.00...68.00 mind 1000s.: 42.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed

1/min: 1250

Inj.-qty. cm3/

difference 1000s.: - 5.0...7.0 #

electromagnet Volt: 12

SP press.—dif.measurement

pompa di mandata (FP)

1.Speed

1/min: 1250

Supply pump pressure difference bar: Shutoff	- 0.10.3 #	† † †	2nd speed Shutoff electromagnet	1/min:	
electromagnet Volt:	12	<u> </u>	Del. quantity	/ cm3/:	0.006.00
Inspection-pump tes Test specifications	t specifications in parentheses	+	5th speed Shutoff	1/min:	2650
Timing device chara	cteristic:	Ī	electromagnet Del. quantity	/ cm3/:	9.0013.00 (7.0015.00)
	2000 6.707.50 (6.407.80)	+	8th speed Shutoff electromagnet	1/min:	2500
Shutoff electromagnet Volt: 3rd speed 1/min: TD travel mm:	12	+++++++++++++++++++++++++++++++++++++++	Del. quantity	/ cm3/: 1000s.: 1/min:	19.5025.50 (17.5027.50) 2200
Shutoff electromagnet Volt: 4th speed 1/min:	12	 	Del. quantity	/ cm3/:	32.0034.00 (30.8035.20)
Shutoff electromagnet Volt:		+++++++++++++++++++++++++++++++++++++++	electromagnet Del. quyntity 20th speed	Volt: / cm3/: 100GS.: 1/min:	12 29.7030.70 (28.0032.40) 500
Supply-pump pressure		‡	Shutoff electromagnet	Volt:	12
1st speed 1/min: Supply-pump pressure bar:	3.303.90	Ī	bet. quantity	/ cm3/:	29.8032.80 (28.3034.30)
Shutoff electromagnet Volt: 2nd speed 1/min:	12	1	Mech. shutof Mech. Abstell		
Supply-pump pressure bar: Shutoff	5.706.30	+	1st speed Del. quantity	/ cm3/:	2200 0.003.00 (0.003.00)
electromagnet Volt: 3rd speed 1/min: Supply-pump	12 2200	†	Shutoff electromagnet		
pressure bar: Shutoff	8.208.80	1	Electr. shut	off:	
electromagnet Volt:		+	1st speed Del. quantity	1/min: / cm3/:	0.003.06
Overlow quantity at		+	Shutoff	000s.:	(0.003.00)
1st speed 1/min: Shutoff		+	electromagnet		-
quantity cm3/10s: 2nd speed 1/min: Shutoff	41.7083.40 (27.8097.30) 2200	† † † † †	Damper set qualified LFG-setting: solidale con Idle delivery	carcas	sa:
electromagnet Volt: Overflow : quantity cm3/10s:	55.60132.90 (41.70152.90)	Ŧ	1st speed Shutoff	1/min:	375
Delivery-quant. and	breakaway char.:	‡	electromagnet Del. quantity	/ cm3/:	12 9.5011.50 (6.5014.50)

High Idle: 1/mi: 475 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 8.50...10.50 1000S.: (5.50...13.50) Residual: 1/min: 500 1.Rotacao Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.50...3.50 1000s.: (1.00...5.00) Load dependent start of delivery: Inj.-qty.dif.measurement: 1st speed 1/min: 1250 Inj.-qty. cm3/ : - 3.5..13.5 " difference 1000s.: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Inj.-qty. cm3/: MAX. difference 1000s.: 2.0...8.0 ' Shutoff electromagnet Volt: 12 TD-travel dif.measurement: 1st speed TD-travel difference mm: --Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 TD-travel : -2.00..3.00 ' difference mm: -Shutoff electromagnet Volt: 12 3rd speed 1/min: 1250 Supply pumppressure : -1.20..1.80 ' bar: difference Shutoff electromagnet Volt: 12 Automatic starting fuel delivery: 1/min: 225 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.00...71.00 1000s.: (37.00...71.00) 2nd speed 1/min: 350

Shutoff electromagnet Volt: 12 Del. quantity cm3/: 20.00...40.00 1000s.: (20.00...40.00) 1/min: 100 4th speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 42.00...68.00 1000s.: (42.00...68.00) Shutoff electromagnet: Cut-in : 10.0 min voltage Rated voltage Mounting and assembly dimensions: Designation K mm: 3.6...3.8 KF mm: K-OT MS mm: 1.2...1.6 mm: 3-1 mm: 18.8...22.8 mm: 82.0...96.0 SVS max. Ya Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 08.03.93 replaces Calibrating oil : ISO-4113 : VE4/8F2300R458-2 : 0 460 484 059 Injection pump Type number Customer Part-No. : Customer-specific information Customer : RENAULT Engine : FQ8-706 TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating oil return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Opening Pressure bar: 130.00...133.00 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450 Start of delivery Prestroke mn: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel Speed 1/min: 1250 Setting value mm: 3.20...3.60

Speed 1/min: 1250 Setting value bar: 4.40...5.00 Shutoff electromagnet Volt: 12 Full-load del. w/out charge press.: 1/min: 1250 Speed Del. quantity cm3/ 1000s.: 31.60...32.60 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (3.0) Low-idle speed regulation Speed 1/min: 410 Del. quantity cm3/ 1000s.: 7.50...11.50 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000S.: (2.5) Residual-Delivery Setting Speed 1/min: 500 Del. quantity cm3/ 1000s.: 2.50...3.50 Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2450 Speed Del. quantity cm3/ 1000s.: 25.5...31.50 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: 40.00...70.00 1000s.: 40.00 mind Shutoff electromagnet Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1250 Speed Inj.-qty. cm3/ difference 1000S.: - 10.5...12.5 # Shutoff electromagnet Volt: 12 SP press.-dif.measurement pompa di mandata (FP) 1.Speed 1/min: 1250

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Supply pump pressure		‡	1st speed Shutoff		
	- 0.100.30#	+	electromagn	et Volt:	12
Shutoff electromagnet Volt:	12	1	Overflow ouantity	: cm3/10e:	41.7083.40 (26.7098.40)
acces onagine voce.	• •	1	2nd speed	1/min:	2250
Inspection pump tes	t specifications	+	Shutoff		
Test specifications	in parentheses	+	electromagn	et Volt:	12
Timing device character	rtenistin:	İ	Overflow quantity	: cm3/10c	55.60139.00 (40.60154.00)
Thirting device chard	bec: 13010.	Ţ	quarterey	UIID7 103.	(40.001)4.007
1st speed 1/min:	750	+	Delivery-qu	ant. and	breakaway char.:
	1.101.90 (0.802.20)	†			
electromagnet Volt:		I	1nd speed	1/min·	2950
2nd speed 1/min:	1250	1	Shutoff	T / HETTI	£730
TD travel mm:	3.203.60	+	electromagn	et Volt:	12
	(2.704.10)	+	Del. quanti	ty cm3/:	0.005.00
Shutoff electromagnet Volt:	10	†	2nd anod	1000s.:	
3rd speed 1/min:	ว่ากักก	I	2nd speed Shutoff	1/min:	2000
<pre>iD travel mm:</pre>	5.806.60	1	electromagn	et Volt:	12
mm:	(5.506.90)	+	Del. quanti	ty $cm3/:$	10.5018.50
Shutoff	12	+	<b>7</b>		(9.5019.50)
electromagnet Volt: 4th speed 1/min:	310	İ	3rd speed Shutoff	1/min:	2450
TD travel mm:	1.003.40 A	I	electromagn	et Volt.	12
nn:	_	+	Del. quanti	ty $cm3/$ :	25.5031.50
KSB/AFB	40	+		1000s.:	(24.5032.50)
valve Volt: Shutoff	12	†	4th speed	1/min:	2250
electromagnet Volt:	12	Ī	Shutoff electromagn	et Valt.	12
5th speed 1/min:	500	+	Del. quanti	ty cm3/:	33.0035.00
TD travel mm:	2.204.60 B	+		1000S.:	(31.7036.30)
KSB/AFB	_	†	5th speed	1/min:	2000
valve Volt:	12	İ	Shutoff electromagn	at Valt.	12
Shutoff	12	I	Del quanti	tv cm3/:	32.5034.50
electromagnet Volt:	12	+	roce quarto,	1000s.:	(31.2035.80)
01.		+	6th speed	1/min:	1625
Supply-pump pressure	e characteristic:	†	Shutoff	a+ 1/al+.	10
1st speed 1/min:	750	I	electromagn	et vott:	30 10 33 10
Supply-pump		+	beer quarter	1000s.:	30.1033.10 (29.3033.90)
pressure bar:	3.103.70	+	/th speed	1/min:	1250
Shutoff	13	+	Shutoff		40
electromagnet Volt: 2nd speed 1/min:	1250	<b>†</b>	electromagn	et volt:	71 40 72 40
Supply-pump	1230	I	bet. qualiti	10008	31.6032.60 (29.8034.40)
pressure bar:	4.405.00	+	8th speed	1/min:	750
Shutoff	42	+	Shutoff		40
electromagnet Volt: 3rd speed 1/min:	2200	†	electromagn	et Volt:	70 20 77 20
Supply-pump	2200	I	vet. quanti	10005	30.2033.20 (29.4034.00)
pressure bar:	6.306.90	+		10000	(2)11011134100)
Shutoff	40	+	Mech. shuto	ff:	
electromagnet Volt:	72	†	Electa ob.	+-++	
Overlow quantity at	overflow valve:	I	Electr. shu	LUII:	
.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		+	1st speed	1/min:	410

Del. quantity cm3/: 0.00...3.00 1000S.: (MAX. 5.0) Shutoff electromagnet Volt: 12 Del. quantity cm3/: 40.00...70.00 1000s.: -Shutoff electromagnet volt: -Damper set qty.: 2nd speed Shutoff 1/min: 210 LFG—setting: solidale con carcassa: Idle delivery: electromagnet Volt: 12 Del. quantity cm3/: 15.00...45.00 1000s.: -1/min: 410 1st speed 4th speed 1/min: 100 Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.50...11.50 10GOS.: (5.50...13.50) electromagnet Volt: 12 Del. quantity cm3/: 40.00...70.00 1000s.: -High Idle: Shutoff electromagnet: 1st speed Shutoff 1/mi: 500 Cut-in min voltage : 10.0 electromagnet Volt: 12 Del. quantity cm3/: 7.00...11.00 1000S.: (5.00...13.00) Rated voltage : 12.0 Mounting and assembly dimensions: Residual: Designation mm: 3.2...3.4 mm: 5.5 mm: 1.2...1.4 mm: 1.5 1/min: 500 1.Rotacao KF Shutoff MS electromagnet Volt: 12 Del. quantity cm3/: 2.50...3.50 1000s.: (1.00...5.00) SVS max. mm: MIKROSCH. ALDA stroke mm: 10.2 MM mm: 25.3...29.3 Ya Load dependent start of delivery: Yb mm: 62.6...74.4 Inj. -qty.dif.measurement: Remarks: 1st speed 1/min: 1250 Inj.-qty. cm3/ : -13.2...17.2" A = KSB adjustment point difference 1000s.: -B = KSB curve point Shutoff electromagnet Volt: 12
2nd speed 1/min: 1250
Inj.—qty. cm3/: MAX.
difference 1000S.: 2.00...8.00 ' TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250 TD-travel difference : 0.40...0.60 " mm: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 TD-travel : 0.30...0.70 ' difference mm: -Automatic starting fuel delivery: 1st speed 1/min: 310

**BO4** 

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet Edition : 08.03.93

replaces Calibrating oil : ISO-4113

: VE4/8F2300R425-5 Injection pump

: 0 460 484 064 Type number

Customer Part-No. :

Customer-specific information

: PSA Customer

Engine : XUD9 A-L

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil

return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Opening

Pressure bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00

x Length

Start of delivery Prestroke mm: -

(from BDC): -

Injection—pump setting values Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250 Setting value mm: 3.50...3.90

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1250 Setting value bar: 5.70...6.30

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250

Del. quantity cm3/ 1000s.: 29.70...30.70

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.0 1000S.: (3.0)

Low-idle speed regulation

1/min: 375 Speed

Del. quantity cm3/ 1000s.: 9.50...11.50

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000S.: (3.0)

Residual-Delivery Setting

Speed 1/min: 500

Del. quantity cm3/ 1000s.: 2.50...3.50

electromagnet Volt: 12

Full-load speed regulation

1/min: 2650 Speed

Del. quantity cm3/ 1000S.: 9.00...13.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 42.00...68.00 mind 1000S.: 42.00

Shutoff

electromagnet Volt: 12

Load-dependent start of delivery:

Inj.-qty.dif.measurement:

Speed 1/min: 1250

Inj.-qty. cm3/ difference 1000S.: - 5.00...7.00 #

Shutoff

electromagnet Volt: 12 SP press.—dif.measurement pompa di mandata (FP)

1.Speed 1/min: 1250

Supply pump	† 1nd speed 1/min: 2900
pressure difference bar: -0.100.30#	+ Shutoff - electromagnet Valt: 12
Shutoff	+ electromagnet Volt: 12 + Del. quantity cm3/: 0.006.00
electromagnet Volt: 12	10008.: -
	+ 2nd speed 1/min: 2650
Inspection pump test specifications	+ Shutoff
Test specifications in parentheses	🕂 electromagnet Volt: 12
	<pre>Del. quantity cm3/: 9.0013.00</pre>
Timing-device characteristic:	1000s.: (7.0015.00)
4	- 3rd speed 1/min: 2500
1st speed 1/min: 800	+ Shutoff
TD travel mm: 1.202.00	electromagnet Volt: 12
mm: (0.902.30) electromagnet Volt: 12	Del. quantity cm3/: 19.5025.50 1000s.: (17.5027.50)
2nd speed 1/min: 1250	+ 4th speed 1/min: 2200
TD travel mm: 3.503.90	+ Shutoff
mm: (3.004.40)	
Shutoff	electromagnet Volt: 12 Del. quantity cm3/: 32.0034.00
electromagnet Volt: 12	1000s.: (30.8035.20)
3rd speed 1/min: 2000	+ 5th speed 1/min: 1250
TD travel mm: 6.707.50	+ Shutoff
mm: (6.407.80)	+ electromagnet Volt: 12
Shutoff	+ Del. quantity cm3/: 29.7030.70
electromagnet Volt: 12	1000s.: (28.0032.40)
Complete and a proposition of the complete design of the complete de	th speed 1/min: 500
Supply-pump pressure characteristic:	+ Shutoff
1st speed 1/min: 500	electromagnet Volt: 12
1st speed	+ Del. quantity cm3/: 29.8032.80 + 1000s.: (28.3034.30)
pressure bar: 3.303.90	T 10003 (20,3034,30)
Shutoff	Mech. shutoff:
electromagnet Volt: 12	Mech. Abstellung:
2nd speed 1/min: 1250	
Supply-pump	1st speed
pressure bar: 5.706.30	+ Del. quantity cm3/: 0.003.00
Shutoff	† 1000s.: (MAX. 5.0)
electromagnet Volt: 12	+ Shutoff
3rd speed 1/min: 2200	† electromagnet volt: 12
Supply-pump pressure bar: 8.208.80	The same about the same of the
pressure bar: 8.208.80 - Shutoff	† Electr. shutoff:
electromagnet Volt: 12	1st speed 1/min: 375
etectionagner vote. 12	Del. quantity_cm3/: 0.003.00
Overlow quantity at overflow valve:	1000S.: (MAX. 5.0)
	Shutoff
1st speed 1/min: 500	electromagnet volt: -
Shutoff	+
electromagnet Volt: 12	Damper set qty.:
Overflow : 41.7083.40	+
quantity cm3/10s: (26.7098.40)	† LFG-setting:
2nd speed 1/min: 2200	- solidale con carcassa:
Shutoff	Idle delivery:
electromagnet Volt: 12 Overflow: 55.60139.00	1st speed 1/-in: 375
quantity cm3/10s: (40.60154.00)	+ 1st speed 1/min: 375 + Shutoff
quarterly control (40.00()4.00)	+ electromagnet Volt: 12
Delivery-quant. and breakaway char.:	Del. quantity cm3/: 9.5011.50
	1000\$.: (6.5014.50)
	1000011 (0.50,1.14.50)

High Idle:		+	Del.	quanti			37.0071.00
1st speed 1/mi: 4 Shutoff	475	1	4th s	peed	1600s		
electromagnet Volt: 1 Del. quantity cm3/: 8	12 8.509.50 (5.5013.50)	++	Shuto elect	iff romagn	et Vol ty cm3	t: 3/:	12 42.0068.00
Residual:		Ŧ	مسماه	ee	1000s		
1.Rotacao 1/min: 5 Shutoff	500	+		iff ele	ctroma	agne	et:
electromagnet Volt: 1 Del. quantity cm3/: 2	12 2.503.50 (1.005.00)	† †		voltagi voltag			10.0 12.0
Load-dependent start		+		-		dm	ly dimensions:
Inj.—qty.dif.measurem		‡	K	nation	IT	m:	3.63.8
1st speed 1/min: 1 Injqty.cm3/:-difference 1000s.:- Shutoff	- 3.5012.5"	<del></del>	KF MS Ya Yb		m	m:	K-0T 1.31.5 18.822.8 82.096.0
electromagnet Volt: 1 2nd speed 1/min: 1 Injqty. cm3/: N difference 1000s.: 2	1250 MAX.	+	Remar	ks:	,,,	:	02.0/0.0
TD-travel dif.measure correttore anticipo i 1st speed 1/min: 1TD-travel : Cdifference mm: -Shutoff	ement: iniezione (SV): 1250 J.901.10 "	++++++++++				•	
electromagnet Volt: 1 2nd speed 1/min: 1 TD-travel : 2 difference mm: -	1250 2.003.00 '	† † †					
SP press.—dif.measure pompa di mandata (FP) 1st speed 1/min: 1 Supply pump- pressure : 1	);	+++++++++++++++++++++++++++++++++++++++					
difference bar: - Shutoff	~	Ī					
electromagnet Volt: 1	12	1					
Automatic starting fu	uel delivery:	1					
1st speed 1/min: 3 Shutoff	350	İ					
electromagnet Volt: 1 Del. quantity cm3/: 2 1000s.: -	20.0040.00	+++++++++++++++++++++++++++++++++++++++					
2nd speed 1/min: 2 Shutoff	225	Ī					
electromagnet Volt: 1	12	<u> </u>					

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 09.03.93 replaces : ISO-4113 Calibrating oil Injection pump : VE5/8F2200L336-7 : 0 460 485 012 Type number Customer Part-No. : Customer-specific information Customer Engine : 074.3 (2.41.) TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating oil return temp. with thermometer : 40.00...43.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 000 assembly Opening bar: 147.00...150.00 Pressure Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840 Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing device travel Speed 1/min: 1500 Setting value mm: 3.80...4.20 AFB/AFB valve Volt: 12 Shutoff

Supply-pump pressure Speed 1/min: 1500 Setting value bar: 6.10...6.70 KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Full-load del. w/out charge press.: 1/min: 1250 Speed Del. quantity cm3/ 1000s.: 35.50...36.50 KSB/AFB 11 Volt: 12 valve Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.0 1000s.: -Low-idle speed regulation Speed 1/min: 415 Del. quantity cm3/ 1000s.: 7.00...9.00 KSB/AFB Volt: 12 valve Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: -Residual-Delivery Setting 1/min: 550 Speed Del. quantity cm3/ 1000s.: 4.50...5.50 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2525 Speed Del. quantity cm3/ 1000s.: 10.00...14.00 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: 35.00...61.00 mind 1000s.: 35.00 KSB/AFB Valve Volt: 12

electromagnet Volt: 12

Shutoff	+	1st speed 1/min:	1000
electromagnet Volt: 12	+	Supply-pump	/ 70
Load-dependent start of delivery:	Ī	pressure bar: KSB/AFB	4.705.30
Injqty.dif.measurement:	Ι	valve Volt:	12
and depend in medical energy.	1	Shutoff	16
Speed 1/min: 1500	1	electromagnet Volt:	12
Injqty. cm3/	+	2nd speed 1/min:	1500
difference 1000s.: - 6.008.00 #	+	Supply-pump	
KSB/AFB	+	pressure bar:	6.106.70
valve Volt: 12	+	KSB/AFB	
Shutoff	+	valve Volt:	12
electromagnet Volt: 12	+	Shutoff	4.0
SP press.—dif.measurement	+	electromagnet Volt:	12
pompa di mandata (FP) 1.Speed 1/min: 1500	Ť	3rd speed 1/min:	2000
Supply pump	T	Supply-pump	7.408.00
pressure	I	pressure bar: KSB/AFB	7.400.00
difference bar: -0.100.30 #	I	valve Volt:	12
KSB/AFB	1	Shutoff	12
valve Volt: 12	1	electromagnet Volt:	12
Shutoff	+	4th speed 1/min:	ร์ดัด
electromagnet Volt: 12	+	Supply-pump	<b>740</b>
	+	pressure bar:	4.906.10
Inspection pump test specifications	+	KSB/AFB	
Test specifications in parentheses	+	valve Volt:	
	+	Shutoff	
Timing-device characteristic:	+	electromagnet Volt:	12
2nd maned 1/min. 2000	<del>}-}-}-}-</del>	0	<b>c</b> ) ,
2nd speed 1/min: 2000 TD travel mm: 6.307.10	†	Overlow quantity at	overflow valve:
TD travel mm: 6.307.10 mm: (6.007.40)	†	1-t	750
KSB/AFB	Ι	1st speed 1/min: KSB/AFB	730
valve Volt: 12	I	valve Volt:	12
Shutoff	I	Shutoff	14
electromagnet Volt: 12	1	electromagnet Volt:	12
3rd speed 1/min: 1500	+	Overflow :	41.7083.40
TD travel mm: 3.804.20	+	guantity cm3/10s:	(27.8097.30)
mm: (3.304.70)	+	2nd speed 1/min:	2200
KSB/AFB	+	KSB/AFB	
valve Volt: 12	+	valve Volt:	12
Shutoff	+	Shutoff	
electromagnet Volt: 12	+	electromagnet Volt:	12
4th speed 1/min: 1000	+	Overflow :	55.60139.90
TD travel mm: 0.501.30	Ť	quantity cm3/10s:	(41.70154.90)
mm: (0.201.60) KSB/AFB	†	Dolations around and	handler all all and
valve Volt: 12	Ι	Delivery-quant. and	preakaway char.:
Shutoff	I		
electromagnet Volt: 12	I	2nd speed 1/min:	2700
9th speed 1/min: 500	1	KSB/AFB	2100
TD travel mm: 2.302.70	+	valve Volt:	12
mm: (1.503,50)	+	Shutoff	
KSB/AFB	+	electromagnet Volt:	12
valve Volt: -	+	Del. quantity cm3/:	0.003.00
Shutoff	+	1000s.:	(0.003.00)
electromagnet Volt: 12	+	5th speed 1/min:	
Committee and the second secon	+	KSB/AFB	
Supply-pump pressure characteristic:	†	valve Volt:	12
	-4-		

Shutoff	-	+ KSB/AFB
electromagnet Volt: Del. quantity_cm3/:	12 -	+ vaíve Volt: 12
Del. quantity cm3/:	10.0014.00	+ Shutoff
	(8.0016.00)	electromagnet Volt: 12
8th speed 1/min: K\$B/AFB	2467	+ Del. quantity cm3/: 7.009.00 + 1000s.: (4.0012.00)
valve Volt:	12	T 10003 (4.0012.00)
Shutoff		Residual:
electromagnet Volt:	12	110010000
Del. quantity cm3/: 1000s.:	18.0028.00	1.Rotacao 1/min: 550
1000s.:	(17.0029.00)	KSB/AFB
TIN Speed (/min:	- 2200	valve Volt: 12
KSB/AFB valve Volt:	12	Shutoff
Shutoff	-	+ electromagnet Volt: 12 + Del. quantity cm3/: 4.505.50
electromagnet Volt:	12	1000s.: (3.007.00)
Del. quantity cm3/:	30.0032.00	2nd speed 1/min: 500
Del. quantity cm3/: 1000s.:	(28.8033.20)	- KSB/AFB
12th speed 1/min:	1250 -	to valve Volt: 12
KSB/AFB	•	+ Shutoff
valve Volt:	72 -	electromagnet Volt: 12 Del. quantity cm3/: 5.007.00
Shutoff	10	+ Del. quantity cm3/: 5.00/.00
electromagnet Volt:	75 50 74 50	1000s.: (3.508.50)
Del. quyntity cm3/: 1000s.:	(33.80 38.20)	Load-dopondont start of dalayary
15th speed 1/min:	750	<pre>Load dependent start of delivery: Injqty.dif.measurement:</pre>
KSB/AFB		Trij. qcy.arr.measurement.
valve Volt:	12 -	1st speed
Shutoff	•	Ini. aty. cm3/ : - 5.5011.5"
electromagnet Volt:	12 -	difference 1000s.: (4.512.5)
Del. quantity_cm3/:	32.0035.00	KSB/AFB
1000s.:	(30.5036.50)	valve Volt: 12
20th speed 1/min:	409 -	Shutoff
KSB/AFB valve Volt:	12	f electromagnet Volt: 12
Shutoff	12	2nd speed 1/min: 1500
electromagnet Volt:	12	Injqty. cm3/: MAX. difference 1000S.: 0.003.00
Del. quantity cm3/:	32.5037.50	KSB/AFB
1000s.:	(30.0040.0c) -	valve Volt: 12
	-	+ Shutoff
Mech. shutoff:	-	electromagnet Volt: 12
	-	
Electr. shutoff:	-	TD-travel dif.measurement:
1st sp∈ed 1/min:	415	correttore anticipo iniezione (SV) 1st speed
Del. quantity_cm3/:	ที่กัก รกก	TD-travel : - 0.600.80"
1000s.:	(MAX. 5.0)	difference mm: -
Shutoff		KSB/AFB
electromagnet volt:	<del>-</del>	valve Volt: 12
KSB/AFB	-	Shutoff
valve Volt:	12 -	electromagnet Volt: 12
	-	- 2nd speed 1/min: 1500
Damper set aty.:	-	TD-travel : - 1.11.5 '
I EC-cotting.	-	difference mm: -
LFG-setting: solidale con carcass	- :a+	KSB/AFB
Idle delivery:	·u.	+ valve Volt: 12 - Shutoff
Tato doctively.	-	electromagnet Volt: 12
1st speed 1/min:	415	- Cooli ollagilor sotti. 12
	· -	SP press.—dif.measurement:

```
pompa di mandata (FP):
1st speed 1/min: 15
              1/min: 1500
Supply pump-
pressure
                       : - 0.6...1.0 '
                    bar: -
difference
KSB/AFB
valve
                   Volt: 12
Shutoff
electromagnet Volt: 12
Automatic starting fuel delivery:
                 1/min: 180
1st speed
KSB/AFB
valve
                  Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 35.00...69.00
1000S.: (35.00...69.00)
2nd speed
KSB/AFB
                 1/min: 380
                  Volt: 12
valve
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 20.00...40.00
1000S.: (20.00...40.00)
                 1/min: 100
4th speed
KSB/AFB
valve
                  Voit: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 35.00...61.00
1000S.: (35.00...61.00)
Shutoff electromagnet:
Cut-in
 min voltage
                        : 10.0
Rated voltage
                        : 12.0
Mounting and assembly dimensions:
Designation
                     mm: 3.2...3.4

mm: 5.6...5.9

mm: 1.2...1.6

mm: 31.8...33.8

mm: 62.4...77.4
K
KF
MS
Ya
Yb
Remarks:
Following pump adjustment, screw out
residual-quantity adjusting screw 2 mm.
On initial measurement, screw in
residual-quantity adjusting screw 2 mm.
```

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet

: VWW

Edition

: 09.03.93

replaces

Calibrating oil

: ISO-4113

Injection pump

: VE5/8F2000L524

Type number

: 0 460 485 014

Customer Part-No. :

Customer-specific information

Customer

Engine

: 2.4L. IND.

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating-oil

return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

assembly

: 1 688 901 000

Opening |

Pressure

bar: 147.00...150.00

Test inj. tubina : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00

x Length

mm: 840

Start of delivery

Prestroke

mm: -

(from BDC): -

Injection pump setting values

Test specifications in parentheses

Timing-device travel

Speed 1/min: 1250 Setting value mm: 2.60...3.00 Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 1250 Setting value bar: 5.80...6.40

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 1250

Del. quantity cm3/ 1000s.: 36.50...37.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 2.0 1000S.: (3.0)

Low-idle speed regulation

1/min: 415 Speed

Del. quantity cm3/ 1000s.: 7.00...9.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.0 10005.: (3.0)

Full-load speed regulation

Speed 1/min: 2100

Del. quantity cm3/ 1000s.: 10.00...14.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 35.00...61.00 mind 1000s.: 35.00

mind

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed

TD travel

1/min: 1850 mm: 4.60...5.40 mm: (4.30...5.70)

Shutoff

electromagnet Volt: 12 3rd speed 1/min: 1250

mm: 2.60...3.00

TD travel

mm: (2.10...3.50)

Shutoff

electromagnet Volt: 12 4th speed 1/min: 750 TD travel mm: 0.40...1.20 mm: (0.30...1.50)

Shutoff electromagnet Volt: 12	+ Del. quantity cm3/: 36.538.5 + 10000s.: -
Supply-pump pressure characteristic:	+ 7th speed 1/min: 1250 + Shutoff
1st speed 1/min: 1850 Supply-pump	electromagnet Volt: 12 - Del. quantity cm3/; 36.5037.50 - 1000\$.: (34.8039.20)
pressure bar: 7.508.10 Shutoff	+ 8th speed 1/min: 750 + Shutoff
electromagnet Volt: 12 2nd speed    1/min: 1250	+ electromagnet Volt: 12 + Del. quantity cm3/: 32.0035.00
Supply-pump pressure bar: 5.806.40 Shutoff	1000s.: (30.5036.50) + 9th speed 1/min: 600 + Shutoff
electromagnet Volt: 12 3rd speed   1/min: 750	+ electromagnet Volt: 12 + Del. quantity cm3/: 31.0034.00 - 1000s.: -
Supply-pump pressure bar: 4.405.00 Shutoff	Mech. shutoff:
electromagnet Volt: 12	+ + Electr. shutoff:
Overlow quantity at overflow valve:  1st speed 1/min: 600	† 1st speed 1/min: 415 † Del. quantity_cm3/: 0.003.00
Shutoff electromagnet Volt: 12 Overflow: 41.7083.40	+ 1000s.: (MAX. 5.0) + Shutoff + electromagnet volt: -
quantity cm3/10s: (27.8097.30) 2nd speed	Idle delivery:
Shutoff electromagnet Volt: 12 Overflow: 55.60139.90	1st speed 1/min: 415 Shutoff
quantity cm3/10s: (41.70154.90)	electromagnet Volt: 12 Del. quantity cm3/: 7.009.00
Delivery-quant. and breakaway char.:	1000s.: (4.0012.00) - 2nd speed 1/min: 500 - Shutoff
2nd speed 1/min: 2140 Shutoff	electromagnet Volt: 12 Del. quantity cm3/: 0.003.60
electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000S.: (0.003.00)	† 1000s.: - Automatic starting fuel delivery:
3rd speed 1/min: 2120 Shutoff	1st speed 1/min: 180
electromagnet Volt: 12 Del. quantity cm3/: 0.0012.00 10005.: -	+ Shutoff + electromagnet Volt: 12 + Del. quantity cm3/: 35.0069.00
4th speed 1/min: 2100 Shutoff	† 1000s.: (35.0069.00)
electromagnet Volt: 12 Del. quantity cm3/: 10.0014.00 10005.: (6.0018.00)	+ 2nd speed 1/min: 380 + Snutoff + electromagnet Volt: 12
5th speed 1/min: 1950 Shutoff electromagnet Volt: 12	Del. quantity cm3/: 15.0035.00 1000s.: (15.0035.00)
Del. quantity cm3/: 34.0036.00 1000s.: (32.8037.20)	4th speed 1/min: 100 Shutoff
6th speed 1/min: 1500 Shutoff electromagnet Volt: 12	+ electromagnet Volt: 12 - Del. quantity cm3/: 35.0061.00 + 1000S:: (35.0061.00)

## Shutoff electromagnet:

Cut-in min voltage Rated voltage : 10.0 : 12.0

# Mounting and assembly dimensions:

Designation K KF Ya Yb mm: 3.2...3.4 mm: 5.6...6.0 mm: 34.3...36.3 mm: 61.0...71.0

:

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

: REN

Test scheet Edition : 03.03.93 : 13.04.92 replaces Calibrating oil : ISO-4113

Injection pump : VE4/9F2200R416 Type number : 0 460 494 273

Customer Part-No. :

Customer-specific information

Customer : RNUR

Engine : J8S - 890 JEEP

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 022 assembly

Opening

Pressure bar: 130.00...133.00

Test inj. tubing : 1 680 750 073

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450

Start of delivery Prestroke mm: -(from BDC): -

Injection pump setting values Test specifications in parentheses

Timing device travel

Speed 1/min: 1400 Charge press. hPa: 800

Setting value mm: 4.00...4.40 Shutoff

electromagnet Volt: 12

Supply-pump pressure

1/min: 1400 Speed Charge press hPa: 800

Setting value bar: 5.10...5.70

Shutoff

electromagnet Volt: 12

Full-load del. with charge press.:

1/min: 1400 Charge press. hPa: 800 Del. quantity cm3/ 1000s.: 47.00...48.00

electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0)

Full-load del. w/out charge press.:

Speed 1/min: 600

Del. quantity cm3/ 1000s.: 37.00...38.00

Shutoff

electromagnet Volt: 12

Low-idle speed regulation

1/min: 425

Del. quantity cm3/ 1000s.: 7.00...11.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 2.5 10008:: (3.0)

Full-load speed regulation

1/min: 2400 Charge press hPa: 800

Del. quantity cm3/

1000s.: 23.00...29.00

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 60.00...100.00 mind 1000s.: 60.00

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed 1/min: 2000 Charge press hPa: 800

TD travel mm:	6.207.00	+	1nd speed 1/min:	700*
mm:	(6.207.00)	+	Charge-air pressure point hPa:	-setting
Shutoff		+	point hPa:	200
electromagnet Volt:	12	+	LDA-stroke mm:	5.5
3rd speed 1/min:		1	Shutoff	
Charge press hPa:	ลกกั	1	electromagnet Volt:	15
	4.004.40	1	Del. quantity cm3/:	/1 nn /2 nn
	(3.504.90)	T	1000c	/70 FO // FO
Shutoff	(3.504.70)	T	2nd on and 1/min	(38.5044.50)
	<b>ሳ</b> ግ	T	2nd speed 1/min:	
electromagnet Volt:	4000	+	Charge press. hPa:	800
4th speed 1/min:		+	Shutoff	
Charge press hPa:		+	electromagnet Volt:	12
	1.902.70	+	Del. quantity cm3/:	0.003.00
mn:	(1.603.00)	+	1000s.:	(0.003.00)
Shutoff	•	+	3rd speed 1/min:	2500
electromagnet Volt:	12	1	Charge press. hPa:	
6th speed 1/min:	1800	1	Shutoff	666
Charge press. hPa:		1	electromagnet Volt:	12
The traval	5 70 4 50	Ŧ	not supposite volt.	2 50 47 50
TD travel mm:	(5.406.80)	T	Del. quantity cm3/:	(2.50)(.50
	(3.406.60)	Ť	1000s.: 5th speed 1/min:	(2.50(7.50)
Shutoff	43	†	orn speed 1/min:	2400
electromagnet Volt:	12	+	Charge press. hPa:	800
		+	Shutoff	
Supply-pump pressure	characteristic:	+	electromagnet Volt:	12
		+	Del. quantity cm3/:	23.0029.00
1st speed 1/min:	600	1	1000s	(22.0030.00)
Supply-pump		1	9th speed 1/min:	2000
pressure bar:	2.603.20	1		
Shutoff	2.003.20	Ŧ	Charge press. hPa: Shutoff	600
	12	T		40
electromagnet Volt:	1/00	+	electromagnet Volt:	12 10 15 10
2nd speed 1/min:		+	Del. quantity cm3/:	43.4045.40
Charge press. hPa:	800	+	10005.:	(42.1046.70)
Supply-pump		+	12th speed 1/min:	
	5.105.70	+	Charge press. hPa:	800
Shutoff		Ŧ	Shutoff	
electromagnet Volt:	12	+	electromagnet Volt:	12
3rd speed 1/min:	2000	1	Del. quyntity cm3/:	47 AA 48 AA
Charge press. hPa:		1	10005	(45.2049.80)
Supply-pump	000	Ŧ	18th speed 1/min:	Ann
pressure bar:	6.907.50	1		
Shutoff	0.70	T	Charge press. hPa:	_
	10	T	Shutoff	42
electromagnet Volt:	12	+	electromagnet Volt:	12
O		†	Del. quantity cm3/:	27.0028.00_
Overlow quantity at	overtiow valve:	+	(0005.:	(34,30,40,30)
		+	20th speed 1/min:	
1st speed 1/min:	600	+	Charge press. hPa:	800
Shutoff		+	Shutoff	
electromagnet Volt:	12	1	electromagnet Volt:	12
Overflow :	41.7083.40	1	Del. quantity cm3/:	44 90 47 90
	(26.7098.40)	1	10000	(43.4049.40)
2nd speed 1/min:	2000	1	1000.	(43.40,47.40)
Charge press. hPa:	200 200	T	Mach chitaff.	
Charge press. IIId:	<del></del>	T	Mech. shutoff:	
Shutoff Short Valde	10	+	m1 =	
electromagnet Volt:		†	Electr. shutoff:	
Overflow :	55.60139.00	+		=
quantity cm3/10s:	(40.60154.00)	+	1st speed 1/min:	425
		+	Del. quantity cm3/:	0.003.00
Delivery-quant. and	breakaway char.:	+	1000s.:	(0.003.00)
•	•	+	Shutoff	
		+	electromagnet volt:	-

### Idle delivery:

1st speed 1/min: 425 Shutoff

Shutoff

electromagnet Volt: 12

Del. quantity cm3/: 0.00...3.00 10005:: (0.00...3.00) 3rd speed 1/min: 450

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 3.00...7.00 1000s.: (1.00...9.00)

### Automatic starting fuel delivery:

1/min: 180 1st speed

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 40.00...100.00 1000S.: (40.00...100.00)

2nd speed 1/min: 300

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 20.00...40.00 1000S.: (20.00...40.00)

4th speed 1/min: 100

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 60.00...100.00 10008:: (60.00...100.00)

#### Shutoff electromagnet:

Cut-in

: 10.0 : 12.0 min voltage Rated voltage

### Mounting and assembly dimensions:

Designation

Κ mm: 3.2...3.4 mm: 5.6...6.0 KF MS mm: 1.3...1.7 SVS max. mm: 4.8 mm: 5.5 mm: 12.7 mm: 9.9...13.9 mm: 54.8...69.2 LDA stroke TLA-A

Ya Yb

#### Remarks:

**B17** 

Operate control lever after each manifold-pressure compensator pressure change.

- \* Correction at adjusting nut
- \* Unscrew KSB ball valve 2 mm

BOSCH-INJ. -PUMP TEST SPECIFICATIONS Speed 1/min: 1250 Charge press hPa: 1000 Note inst. in remarks column Setting value bar: 5.60...6.20 Shutoff Test scheet Edition : PEU electromagnet Volt: 12 : 04.03.93 : 13.94.92 replaces Full-load del. with charge press.: Calibrating oil : ISO-4113 1/min: 1250 Injection pump : VE4/9F2250R445 Charge press. hPa: 1000 : 0 460 494 278 Del. quantity cm3/ 1000s.: 53.50...54.50 Type number Customer Part-No. : Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.0 1000S.: (3.0) Customer-specific information Customer : PSA Engine : XUD 9 TE-L (Cit. Full-load del. w/out charge press.: TEST BENCH REQUIREMENTS Speed 1/min: 500 Del. quantity cm3/ 1000s.: 37.50...38.50 Overflow restricti: 1 463 456 303 Shutoff Calibrating-oil electromagnet Volt: 12 return temp. with thermometer : 42.00...48.00 Electronically : 40.00...50.00 Low-idle speed regulation 1/min: 400 Speed Inlet press., bar : 0.30...0.40 Charge press hPa: -Del. quantity cm3/ 1000S.: 12.0...14.0 Calibrating nozzle-holder : 1 688 901 022 assembly Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000S.: (3.0) Opening bar: 130.00...133.00 Pressure Residual-Delivery Setting Test inj. tubing : 1 680 750 073 1/min: 500 Speed Del. quantity cm3/ 1000s.: 6.00...7.00 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length Shutoff electromagnet Volt: 12 Start of delivery Prestroke mm: -Full-load speed regulation (from BDC): -Speed 1/min: 2575 Charge press hPa: 1000 Del. quantity cm3/ 1000S.: 12.00...16.00 Injection-pump setting values Test specifications in parentneses Timing-device travel Shutoff electromagnet Volt: 12 Speed 1/min: 1250 Charge press. hPa: 1000 Setting value mm: 3.40...3.80 Start: Speed 1/min: 150 Del. quantity cm3/: 37.00...67.00 mind 1000s.: 37.00 Shutoff electromagnet Volt: 12 Supply-pump pressure

Shutoff electromagnet Volt: 12	‡	Charge press. hPa: Supply-pump	
Load-dependent start of delivery:	1	pressure bar: Shutoff	7.307.90
Injqty.dif.measurement:	+	electromagnet Volt:	12
Speed 1/min: 1250 Charge press hPa: -	‡	Overlow quantity at	overflow valve:
Inj.—qty. cm3/ difference 1000S.: - 11.015.00 # Shutoff	+	1st speed 1/min: Charge press. hPa: Shutoff	500 1000
electromagnet Volt: 12 TD-travel dif.measurement correttore anticipo iniezione (SV)	+++++++++++++++++++++++++++++++++++++++	electromagnet Volt: Overflow : quantity cm3/10s:	41.7083.40
1.Speed 1/min: 1250 Charge press hPa: - TD-travel	+	quantity cm3/10s: 2nd speed 1/min: Charge press. hPa: Shutoff	1000
difference mm: -0.901.10 # Shutoff	‡	electromagnet Volt: Overflow :	12 55,60139.00
electromagnet Volt: 12	‡	quantity cm3/10s:	(40.60154.00)
Inspection-pump test specifications Test specifications in parentheses	+	Delivery-quant. and	breakaway char.:
Timing-device characteristic:	t	1nd speed 1/min: Charge-air pressure	750*
2rd speed 1/min: 2000	Ŧ	point hPa:	350
Charge press hPa: 1000 TD travel mm: 6.106.90	1	LDA-stroke mm: Shutoff	5.8
mm: (5.807.20)	1	electromagnet Volt:	12
Shutoff electromagnet Volt: 12	+	Del. quantity cm3/:	46.0047.00
3rd speed 1/min: 1250	I	2nd speed 1/min:	(43.5049.50) 2750
Charge press hPa: 1000	+	Charge press. hPa:	
TD travel mm: 3.403.80 mm: (2.904.30)	T .	Shutoff electromagnet Volt:	12
Shutoff	+	Del. quantity cm3/:	0.006.00
electromagnet Volt: 12 4th speed  1/min: 750	İ	10005.: 5th speed 1/min:	(0.006.00)
Charge press hPa: 1000	Ţ	Charge press. hPa:	
TD travel mm: 1.101.90	+	Shutoff	
mm: (0,802.20) Shutoff	+	electromagnet Volt:	12
electromagnet Volt: 12	Ţ	Del. quantity cm3/: 1000s:	(10.0018.00)
Supply-pump pressure characteristic:	‡	8th speed 1/min: Charge press. hPa:	2375
1st speed 1/min: 750	†	Shutoff'	10
Charge press. hPa: 1000 Supply-pump	Ī	electromagnet Volt: Del. quantity cm3/: 1000s.:	33.0043.00 (32.0044.00)
pressure bar: 4.405.00 Shutoff	‡	9th speed 1/min: Charge press. hPa:	2150
electromagnet Volt: 12 2nd speed   1/min: 1250	†	Shutoff	
2nd speed 1/min: 1250 Charge press. hPa: 1000 Supply-pump	Ī	electromagnet Volt: Del. quantity cm3/: 1000S.:	49.5051.50 (48.30 52.70)
pressure bar: 5.606.20 Shutoff	‡	10th speed 1/min: Charge press. hPa:	2000
electromagnet Volt: 12 3rd speed	‡	Shutoff electromagnet Volt:	
• • • • • • • • • • • • • • • • • • • •	•		,

Del. quantity cm3/: 5	51.0053.00 (49.8054.20)	<u>†</u>	Residual:
12th speed 1/min: 1 Charge press. hPa: 1 Shutoff	1250	+	1.Rotacao 1/min: 500 Shutoff
electromagnet Volt: 1 Del. quyntity cm3/: 5 1000s.: (	12 53.5054.50	<del> </del>	electromagnet Volt: 12 Del. quantity cm3/: 6.007.00 1000S.: (4.508.50)
18th speed 1/min: 5 Charge press. hPa: - Shutoff		<u></u>	Load-dependent start of delivery: Injqty.dif.measurement:
electromagnet Volt: 1 Del. quantity cm3/: 3 10005.: ( 20th speed 1/min: 5	37.5038.50	†	1st speed 1/min: 1250 Charge press. hPa: - Iniqty. cm3/: -9.015.0 # difference 1000s: -(8.015.0 #
Charge press. hPa: 1 Shutoff	1000	Ŧ	difference 1000s.: -(8.018.0) # Shutoff electromagnet Volt: 12
electromagnet Volt: 1 Del. quantity cm3/: 4 1000S.: (	12 46.5049.50 (45.0051.00)	+	2nd speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/: MAX.2.08.0" difference 1000s.: -
Mech. shutoff: Mech. Abstellung:		+	TD-travel dif.measurement:
1st speed 1/min: 2 Charge press. hPa: 1 Del. quantity cm3/: 0	1000 0.003.00	†	correttore anticipo iniezione (SV): 1st speed
Shutoff electromagnet volt: 1	(STR.MAX.5.0) 12	†	difference mm: - Shutoff electromagnet Volt: 12
Electr. shutoff:		Ī	2nd speed 1/min: 1250 Charge press. hPa: -
1st speed 1/min: 4 Charge press. hPa: - Del. quantity cm3/: 0	-	I I	TD-travel : - 2.12.5 " difference mm: - (1.63.0) " SP pressdif.measurement:
1000S.: ( Shutoff electromagnet volt:	(STR.MAX.5.0)	+++++++++++++++++++++++++++++++++++++++	pompa di mandata (FP): 1st speed 1/min: 1250 Charge press. hPa: -
Damper set qty.:		+	Supply pump- pressure : - 0.71.50 "
LFG-setting: solidale con carcassa Idle delivery:	a:	<u> </u>	difference bar: - Shutoff electromagnet Volt: 12
1st speed 1/min: 4 Shutoff	400	+	Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set)
electromagnet Volt: 1 Del. quantity cm3/: 1 1000S.: (	12 12.0014.00 (9.0017.00)	+++++++++++++++++++++++++++++++++++++++	scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 8,5
High Idle:		Ī	1st speed 1/min: 600 Charge press. hPa: 1000
1st speed 1/mi: 5 Shutoff	500	‡	Shutoff
electromagnet Volt: 1 Del. quantity cm3/: 1 1000s.: (	12 11.0013.00 (8.0016.00)	†	electromagnet Volt: 12 Del. quantity cm3/: 27.035.0 1000s.: MIKROSCHALTER
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		+	Automatic starting fuel delivery:

1/min: 380 2nd speed

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 25.00...45.00 1000s.: (25.00...45.00)

3rd speed Shutoff 1/min: 200

electromagnet Volt: 12 Del. quantity cm3/: 50.00...56.00 1000s.: (45.50...60.50)

4th speed Shutoff 1/min: 150

electromagnet Volt: 12 Del. quantity cm3/: 37.00...67.00 1000S.: (37.00...67.00)

### Shutoff electromagnet:

Cut-in

: 10.0 : 12.0 min voltage Rated voltage

### Mounting and assembly dimensions:

Designation

K KF

LDA stroke

mm: 3.2...3.4 mm: K-OT mm: 5.8 mm: 18.8...22.8 mm: 78.0...92.0 Υa Yb

#### Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

\* Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 09.03.93 replaces Calibrating oil : ISO-4113 : VE4/9F2050R441 Injection pump Type number : 0 460 494 291 Customer Part-No. : Customer-specific information Customer : IVECO-SOFIM : 8144.97.1400 Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating oil return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Opening Pressure bar: 130.00...133.00 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450 Start of delivery Prestroke mm: 0.2 (from BDC): +-0.02(0.04)Injection-pump setting values Test specifications in parentheses Timing-device travel 1/min: 1000 Speed Charge press. hPa: 1000 Setting value mm: 2.40...2.80 Shutoff electromagnet Volt: 12 Supply-pump pressure

Speed 1/min: 1000 Charge press hPa: 1000 Setting value bar: 4.70...5.30 Shutoff electromagnet Volt: 12 Full-load del. with charge press.: Speed 1/min: 1200 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 65.00...66.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 3.0 1000S.: (3.0) Full-load del. w/out charge press.: 1/min: 500 Del. quantity cm3/ 1000s.: 41.00...42.00 Shutoff electromagnet Volt: 12 Low-idle speed regulation 1/min: 425 Speed Charge press hPa: -Del. quantity cm3/ 1000s.: 10.50...14.50 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000\$.: (2.5) Residual-Delivery Setting 1/min: 550 Del. quantity cm3/ 1000S.: 0.00...5.00 Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2400 Speed Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 35.00...41.00 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: 50.00...74.00 mind 1000S.: 50.00

Charge press. hPa: 1000 Supply-pump pressure Shutoff electromagnet Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement: pressure bar: 4.70...5.30 Shutoff electromagnet Volt: 12 3rd speed 1/min: 2050 Charge press. hPa: 1000 Supply-pump Speed 1/min: 1000 Charge press hPa: 1000 cm3/ Inj.-qty. difference 1000s.: - 19.0...21.0 # bar: 8.40...9.00 pressure Shutoff Shutoff electromagnet Volt: 12 SP press.—dif.measurement pompa di mandata (FP) 1.Speed 1/min: 1000 Charge press hPa: 1000 electromagnet Volt: 12 Overlow quantity at overflow valve: Charge press Supply pump 1st speed 1/min: 500 Charge press. hPa: -Shutoff pressure bar: - 0.10..0.30# electromagnet Volt: 12 Overflow: 41.70...83.40 quantity: cm3/10s: (26.70...98.40) 2nd speed: 1/min: 2050 difference Shutoff electromagnet Volt: 12 Inspection-pump test specifications Test specifications in parentheses Charge press. hPa: 1000 Shutoff electromagnet Volt: 12 Overflow : 55.50...139.00 quantity cm3/10s: (40.60...154.00) Timing-device characteristic: 1/min: 1800 hPa: 1000 2nd speed Charge press Delivery-quant. and breakaway char.: mm: 8.00...8.80 mm: (7.70...9.10) TD travel Shutoff 1/min: 700\* 1nd speed electromagnet Volt: 12
3rd speed 1/min: 1000
Charge press hPa: 1000
TD travel mm: 2.00...2.40
mm: (1.70...2.70) Charge-air pressure-setting point hPa: 350 LDA-stroke mm: 4.5 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 53.50...54.50
1000S.: (51.50...56.50)
2nd speed 1/min: 2750 Shutoff electromagnet Volt: 12 5th speed 1/min: 2050 Charge press. hPa: 1000 Charge press. hPa: 1000 Shutoff mm: 9.60...10.40 mm: (9.30...10.70) TD travel electromagnet Volt: 12
Del. quantity cm3/: 0.00...3.00
1000S.: (0.00...3.00)
3rd speed 1/min: 2400
Charge press. hPa: 1000
Shutoff Shutoff electromagnet Volt: 12 6th speed 1/min: 1400 Charge press. hPa: 1000 mm: 4.80...5.60 TD travel electromagnet Volt: 12
Del. quantity cm3/: 35.00...41.00
1000S.: (34.00...42.00)
9th speed 1/min: 2050
Charge press. hPa: 1000
Shutoff mm: (4.50...5.90) Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: 1/min: 700 hPa: 1000 1st speed Charge press. Supply-pump pressure bar: 3.10...3.70 Shutoff electromagnet Volt: 12

Shutoff electromagnet Volt: 12 Del. quyntity cm3/: 65.0066.00 1000S.: (63.5067.50) 18th speed 1/min: 500 Charge press. hPa: - Shutoff electromagnet Volt: 12 Del. quantity cm3/: 41.0042.00 1000S.: (39.0044.00)	Shutoff electromagnet Volt: 12  TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1000 Charge press. hPa: 1000 TD-travel :- 0.700.90" difference mm: - Shutoff
Mech. shutoff:	electromagnet Volt: 12 - 2nd speed 1/min: 1000
Electr. shutoff:	+ Charge press. hPa: 1000 - TD-travel :- 1.11.9 '
1st speed 1/min: 425 Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) Shutoff	+ difference mm: - + Shutoff + electromagnet Volt: 12
electromagnet volt: -	+ Part-load del.at 3rd injqty. + terza fermo della portata
Damper set qty.:	+ stop (EGR set) + scarico) (ARF)
LFG-setting: solidale con carcassa: Idle delivery:	gaz d'échappement-ARF) + Spacing mm: 12.0  1st speed 1/min: 1000
1st speed 1/min: 425 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.5014.50 1000S.: (9.5015.50)	Charge press. hPa: - Shutoff electromagnet Volt: 12 Del. quantity cm3/: 25.5026.50 1000s.: (23.5028.50)
High Idle:	Automatic starting fuel delivery:
1st speed 1/mi: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 11.0015.00	1st speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quartity cm3/: 36.0048.00 1000s.: -
1000\$:: (10.0016.00)  Residual:	2nd speed 1/min: 200
1.Rotacao 1/min: 550 Shutoff	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 50.0074.00 10005.: -
electromagnet Volt: 12 Del. quantity cm3/: 0.005.00 1000S.: -	4th speed 1/min: 100 Shutoff
Load-dependent start of delivery: Injqty.dif.measurement:	electromagnet Volt: 12 bel. quantity cm3/: 50.0074.00 1000S.: -
1st speed 1/min: 1000 Charge press. hPa: 1000	T Shutoff electromagnet:
Inj. qty. cm3/ : - 18.026.0" difference 1000s.: - 2nd speed 1/min: 1000 Charge press. hPa: 1000	Cut-in ## ## ## ## ## ## ## ## ## ## ## ## ##
Inj. qty. cm3/: MAX. difference 1000s.: 4.06.0	Mounting and assembly dimensions:

Designation

K KF mm: -mm: 5.6...6.0 mm: 1.1...1.5 mm: 4.5 mm: 41.3...43.3 mm: 45.0...50.6 MS LDA stroke Ya Yo

# Ajustement Potentiometer:

Angle for

": LL-ANSCH.

pot. Supply voltage

volt: 5.0 pot.

Output volt

volt: 0.5 pot.

#### Remarks:

Operate control lever after each manifold pressure compensator pressure change.

\* Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : 03.03.93 : 15.04.92 Edition replaces Calibrating oil : ISO-4113 : VE4/9F2050R442 Injection pump Type number : 0 460 494 292 Customer Part-No. : Customer-specific information Customer : IVECO-SOFIM : 8144.97.2400 RENAULT Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil °C return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Openina bar: 130.00...133.00 Pressure Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length Start of delivery mm: 0.2 Prestroke (from BDC): +0.02(0.04)Injection-pump setting values Test specifications in parentheses Timing-device travel 1/min: 1000 Speed Charge press. hPa: 1000 Setting value mm: 2.00...2.40 Shutoff electromagnet Volt: 12

1/min: 1000 hPa: 1000 Charge press Setting value bar: 4.70...5.30 Shutof? electromagnet Volt: 12 Full-load del. with charge press.: Speed 1/min: 1200 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 65.00...66.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 3.0 1000s.: (3.0) Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 41.00...42.00 Shutoff electromagnet Volt: 12 Low-idle speed regulation 1/min: 425 Del. quantity cm3/ 1000s.: 10.50...14.50 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2,5 1000S.: (2.5) Residual-Delivery Setting 1/min: 550 Speed Del. quantity cm3/ 1000s.: 0.50...4.50 Shutoff electromagnet Volt: 12 Full-load speed regulation Speed 1/min: 2400 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 35.00...41.00 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: 50.00...74.00 mind 1000s.: 50.00 Shutoff electromagnet Volt: 12

**B26** 

Supply-pump pressure

	+ Supply-pump
Load-dependent start of delivery: Injqty.dif.measurement:	pressure bar: 4.705.30
0 - 1 4000	+ electromagnet Volt: 12
Speed 1/min: 1000 Charge press hPa: 1000	3rd speed 1/min: 2050
Inj.—qty. cm3/	+ Charge press. hPa: 1000 + Supply-pump
difference 1000S.: - 19.021.0 #	pressure bar: 8.409.00
Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
SP press.—dif.measurement pompa di mandata (FP)	+ Overlow quantity at overflow valve:
1.Speed 1/min: 1000	- Over tow quarterty at over thow valve.
Charge press hPa: 1000	1 1st speed 1/min: 500
Supply pump	+ Shutoff
pressure difference bar: - 0.10.3 #	+ electromagnet Volt: 12 + Overflow : 41.7083.40
Shutoff	quantity cm3/10s: (41.7083.40)
electromagnet Volt: 12	+ 2nd speed 1/min: 2050
	+ Charge press. hPa: 1000
Inspection pump test specifications Test specifications in parentheses	+ Shutoff
rest specifications in parentheses	+ electromagnet Volt: 12 + Overflow : 55.60139.00
Timing-device characteristic:	quantity cm3/10s: (40.60154.00)
2nd amond 4/in 4000	+
2nd speed 1/min: 1800 Charge press hPa: 1000	Delivery-quant. and breakaway char.:
TD travel mm: 8.008.80	I
mm: (7.709.10)	1nd speed 1/min: 700*
Shutoff	+ Charge air pressure setting
electromagnet Volt: 12 3rd speed	+ point hPa: 350 + LDA-stroke mm: 4.5
Charge press hPa: 1000	Shutoff
TD travel mm: 2.002.40	+ electromagnet Volt: 12
mm: (1.502.90)	Del. quantity cm3/: 53.5054.50 1000s.: (51.5056.50)
Shutoff electromagnet Volt: 12	10005.: (51.5056.50) 2nd speed 1/min: 2750
5th speed 1/min: 2050	Charge press. hPa: 1000
Charge press. hPa: 1000	+ Shutoff
TD travel mm: 9.6010.40	+ electromagnet Volt: 12
mm: (9.3010.70) Shutoff	+ Del. quantity cm3/: 0.003.00 + 1000s.: (0.003.00)
electromagnet Volt: 12	5th speed 1/min: 2400
6th speed 1/min: 1400	+ Charge press. hPa: 1000
Charge press. hPa: 1000 TD travel mm: 4.805.60	+ Shutoff
TD travel mm: 4.805.60 mm: (4.505.90)	+ electromagnet Volt: 12 + Del. quantity cm3/: 35.0041.00
Shutoff	1000\$.: (34.0042.00)
electromagnet Volt: 12	+ 9th speed 1/min: 2050
Supply-pump pressure characteristic:	+ Charge press. hPa: 1000 + Shutoff
adhlith hi esserie cuaracretization	electromagnet Volt: 12
1st speed 1/min: 700	+ Del. quantity cm3/: 65.0068.00
Charge press. hPa: 1000	1000\$.: (64.3068.70) 12th speed 1/min: 1200
Supply-pump pressure bar: 3.103.70	† 12th speed 1/min: 1200
pressure bar: 3.103.70 Shutoff	+ Charge press. hPa: 1000 + Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
2nd speed 1/min: 1000	+ Del. quyntity cm3/: 65.0066.00
Charge press. hPa: 1000	+ 1090s.: (63.5067.50)

18th speed 1/min: Charge press. hPa: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.:	- 12	Injqty. cm3/: MAX difference 1000S.: 2.008.00 ' Shutoff electromagnet Volt: 12  TD-travel dif.measurement:
Mech. shutoff:	,	correttore anticipo iniezione (SV) 1st speed  1/min: 1000
Electr. shutoff:	-	Charge press. hPa: 1000 TD-travel: - 0.70.9" difference: mm: -
	425 0.003.00 (0.003.00)	2nd speed 1/min: 1000 Charge press. hPa: 1000 TD-travel : - 1.11.9 '
Shutoff electromagnet volt:	-	<del> </del>
Damper set oty.:	-	SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1000
LFG-setting: solidale con carcas: Idle delivery:	sa:	Part-load del.at 3rd injqty. terza fermo della portata
1st speed 1/min: Shutoff	425	stop (EGR set) scarico) (ARF) gaz d'éuhappement-ARF)
electromagnet Volt: Del. quantity cm3/: 1000\$.:	12 10.5014.50	Spacing mm: 12.0
2nd speed 1/min: Shutoff	(9.5015.50) 475	1st speed 1/min: 1000   Charge press. hPa: -   Shutoff
electromagnet Volt: Del. quantity cm3/: 1000s.:	12 2.008.00	electromagnet Volt: 12 Del. quantity cm3/: 25.0027.00 1000S.: (23.5028.50
High Idle:		Automatic starting fuel delivery:
1st speed 1/mi: Shutoff	500	1st speed 1/min: 200 Shutoff
electromagnet Volt: Del. quantity cm3/: 1000s.:	12 11.0015.00 (10.0016.00)	electromagnet Volt: 12 Del. quantity cm3/: 50.0074.00 1000S.: (50.0074.00
Residual:		2nd speed 1/min: 350 Shutoff
1.Rotacao 1/min: Shutoff electromagnet Volt:	4	electromagnet Volt: 12 Del. quantity cm3/: 36.0044.00 1000s.: (36.0044.00
Del. quantity cm3/:	0.504.50 (0.005.00)	+ - 4th speed 1/min: 100
Load-dependent stam Injqty.dif.measure		- Shutoff - electromagnet Volt: 12 - Del. quantity cm3/: 50.0074.00 - 1000S.: (50.0074.00
1st speed 1/min: Charge press. hPa: Inj.—qty. cm3/	1000 -	Shutoff electromagnet:
difference 1000s.: 2nd speed 1/min: Charge press. hPa:	-(18.026.0) '' - 1000 -	Cut-in min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

KF mm: KF mm: 5.6...6.0
MS mm: 1.1...1.5
LDA stroke mm: 4.5
FH mm: MIKROSCH.
TLA-E mm: 10.3
Ya mm: 41.3...43.3
Yb mm: 45.0...50.6

### Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

\* Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 12.02.93 replaces Calibrating oil : ISO-4113 : VE4/9F2200L153-2 : 0 460 494 303 Injection pump Type number Customer Part-No. : Customer-specific information Customer : RNUR Engine : J8S TEST BENCH REQUIREMENTS Calibrating-oil with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Opening Pressure bar: 130.00...133.00 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450 Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel Speed 1/min: 1400 Charge press. hPa: 800 Setting value mm: 4.00...4.40

Speed 1/min: 1400 Charge press hPa: 800 Setting value bar: 5.10...5.70 Shutoff electromagnet Volt: 12 Full-load del. with charge press.: 1/min: 1400 Speed Charge press. hPa: 800 Del. quantity cm3/ 1000s.: 47.00...48.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 10008.: (3.0) Full-load del. w/out charge press.: Speed 1/min: 600 Del. quantity cm3/ 1000s.: 37.00...38.00 Shutoff electromagnet Volt: 12 Low-idle speed regulation Speed 1/mire: 425 Del. quantity cm3/ 1000s.: 7.00...11.00 Shutoff electromagnet Volt: 12 Full-load speed regulation Speed 1/min: 2400 Charge press hPa: 800 Del. quantity cm3/ 1000s.: 23.00...29.00 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: 60.00...80.00 mind 1000s.: 60.00 Shutoff electromagnet Volt: 12 Inspection-pump test specifications Test specifications in parentheses Timing device characteristic: 1/min: 1000 1st speed hPa: 800 Charge press mm: 1.90...2.70 mm: (1.60...3.00) TD travel electromagnet Volt: 12.0

electromagnet Volt: 12

Supply-pump pressure

2nd speed 1/min: 1400	+	Shutoff	
Charge press hPa: 800	+	electromagnet Volt:	12
TD travel mm: 4.004.40 mm: (3.504.90)	†	Del. quantity cm3/:	41.0042.00
Shutoff	I	3rd speed 1/min:	(38.5044.50)
electromagnet Volt: 12	1	Charge press. hPa:	
3rd speed 1/min: 1800	+	Shutoff	000
Charge press hPa: 800	+	electromagnet Volt:	12
TD travel mm: 5.706.50	+	Del. quantity cm3/:	0.003.00
mm: (5.406.80) Shutoff	†	10005.:	
electromagnet Volt: 12	1	4th speed 1/min: Charge press. hPa:	
4th speed 1/min: 2000	I	Shutoff	000
Charge press hPa: 800	+	electromagnet Volt:	12.0
TD travel mm: 6.27.0	+	Del. quantity cm3/:	2.5017.50
mm: —	+	100ús.:	
Cimplication processes about the state	+	5th speed 1/min:	
Supply-pump pressure characteristic:	†	Charge press. hPa: Shutoff	800
1st speed 1/min: 600	I	electromagnet Volt:	12 0
Charge press. hPa: -	1	Del. quantity cm3/:	23.0029.00
Supply-pump	+	1000s.:	(22.0030.00)
pressure bar: 2.603.20	+	6th speed 1/min:	2000
Shutoff	+	Charge press. hPa:	800
electromagnet Volt: 12 2nd speed   1/min: 1400	†	Shutoff	12.0
Charge press. hPa: 800	I	<pre>electromagnet Volt: Del. quantity cm3/:</pre>	12.0
Supply-pump	1	1000s.	(42.1046.70)
pressure bar: 5.105.70	+	7th speed 1/min:	1400
Shutoff	+	Charge press. hPa:	
electromagnet Volt: 12	+	Shutoff	40.0
3rd speed 1/min: 2000 Charge press. hPa: 800	†	electromagnet Volt:	12.0
Supply-pump	Ī	Del. quantity cm3/:	(45.2049.80)
pressure bar: 6.907.50	I	8th speed 1/min:	1000
Shutoff	+	Charge press. hPa:	
electromagnet Volt: 12	+	Shutoff	
Overalle visit manufacture and account to a constant	+	electromagnet Volt:	12
Overlow quantity at overflow valve:	†	Del. quantity cm3/:	44.9047.90
1st speed 1/min: 600	Ι	9th speed 1/min:	(43.4049.40)
Charge press. hPa: -	I	Charge press. hPa:	
Shutoff	+	Shutoff	
electromagnet Volt: 12.0	+	electromagnet Volt:	12
Overflow : 41.7033.40	+	Del. quantity cm3/:	37.0038.00
quantity cm3/10s: (26.7098.40) 2nd speed	†	1000S.:	(34.5040.50)
2nd speed 1/min: 2000 Charge press. hPa: 800	I	Mech. shutoff:	
Shutoff	I	Mech. Shacorr.	
electromagnet Volt: 12	+	Electr. shutoff:	
Overflow : 55.60139.00	+		
quantity cm3/10s: (40.60154.00)	+	1st speed 1/min:	
not from another and breaker or shop a	†	Del. quantity cm3/:	0.003.00
Delivery-quant. and breakaway char.:	Ī	Shutoff	(0.003.00)
	1	electromagnet volt:	_
1nd speed 1/min: 600	+		
Charge-air pressure-setting	+	Idle delivery:	
point hPa: 200	+	4-4	125
LDA-stroke mm: 4.5	+	1st speed 1/min:	425

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Shutoff
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 3.00...7.00
1000S.: (1.00...9.00)
3rd speed 1/min: 660
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 0.00...3.00
1000s.: (0.00...3.00)
Automatic starting fuel delivery:
1st speed
                 1/min: 300
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 20.00...40.00
1000s.: -
2nd speed
                 1/min: 180
Shutoff
electromagnet Volt: 12.0
Del. quantity cm3/: 40.00...100.00
1000s.: -
Shutoff electromagnet:
Cut-in
 min voltage
                        : 10.0
                        : 12.0
Rated voltage
Mounting and assembly dimensions:
Designation
                     mm: 3.2...3.4
mm: 5.6...6.0
mm: 1.3...1.7
K
KF
MS
SVS max.
                     mm: 3.0
                     mm: 4.5
LDA stroke
                     mm: 38.8...42.8
mm: 34.1...43.9
Ya
Yb
Remarks:
Operate control lever after each
manifold-pressure compensator pressure
change.
* Correction at adjusting nut
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BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 1250 Speed Charge press hPa: 750 Note inst. in remarks column Setting value bar: 5.40...6.00 Shutoff Test scheet Edition : VWW electromagnet Volt: 12 : 05.03.93 replaces Full-load del. with charge press.: Calibrating oil : ISO-4113 Speed 1/min: 1250 Charge press. hPa: 750 : VE4/9F2300R433-10 : 0 460 494 306 Injection pump Del. quantity cm3/ 1000s.: 50.00...51.00 Type number Customer Part-No. : Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 Customer-specific information 1000S.: (3.0) Customer : VW : 1,9 L UD im A3 Engine Full-load del. w/out charge press.: TEST BENCH REQUIREMENTS 1/min: 450 Speed Del. quantity cm3/ 1000S.: 37.2...43.2 Overflow restricti: 1 463 456 303 Shutoff Calibrating-oil electromagnet Volt: 12 return temo. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Low-idle speed regulation 1/min: 450 Inlet press., bar: 0.30...0.40 Del. quantity cm3/ 1000S.: 16.0...18.0 Calibrating nozzle-holder Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000S.: (3.0) : 1 638 901 000 assembly Opening. bar: 147.00...150.00 Pressure Residual-Delivery Setting Test inj. tubing : 1 680 750 000 1/min: 550 Del. quantity cm3/ 1000s.: 7.00...8.00 Outside diameter : 6.00 x Wall thickness : 2.00 Shutoff mm: 840 x Length electromagnet Volt: 12 Start of delivery Full-load speed regulation Prestroke mm: -(from BDC): -1/min: 2600 Speed Charge press hPa: 750 Injection—pump setting values Test specifications in parentheses Del. quantity cm3/ 1000s.: 9.00...13.00 Shutoff Timing-device travel electromagnet Volt: 12 Speed 1/min: 1250 Charge press. hPa: 750 Start: Setting value mm: 4.30...4.50 Speed 1/min: 100 Shutoff Del. quantity cm3/: -mind 1000S.: 40.0 electromagnet Volt: 12 Shutoff Supply-pump pressure electromagnet Volt: 12

CO5

Supply-pump pressure Load-dependent start of delivery: Inj.—qty.dif.measurement: bar: 7.40...8.00 Shutoff electromagnet Volt: 12 Speed 1/min: 1250 Charge press hPa: -Overlow quantity at overflow valve: cm3/ Inj. aty. ist speed 1/min: 700 Charge press. hPa: 750 Shutoff difference 1000s.: - 4.5...6.5 # electromagnet Volt: 12 SP press.-dif.measurement pompa di mandata (FP) electromagnet Volt: 12
Overflow : 41.70...83.40
quantity cm3/10s: (27.80...97.30)
2nd speed 1/min: 2100
Charge press. hPa: 750
Shutoff 1.Speed 1/min: 1250 Charge press Supply pump hPa: pressure difference electromagnet Volt: 12 Overflow : 55.60...139.90 bar: - 0.10..0.30# Shutoff electromagnet Volt: 12 auantity cm3/10s: (41.70...154.90) Inspection pump test specifications Test specifications in parentheses Delivery-quant. and breakaway char.: cnd speed 1/min: 2750 Charge press. hPa: 750 Shutoff Timing device characteristic: 1/min: 2100 hPa: 750 2nd speed electromagnet Volt: 12
Del. quantity cm3/: 0.00...6.00
1000S.: (0.00...6.00)
5th speed 1/min: 2600
Charge press. hPa: 750
Shutoff Charge press TD travel mn: 8.00...8.60 mm: (7.50...9.10) Shutoff electromagnet Volt: 12
3rd speed 1/min: 1250
Charge press hPa: 750
TD travel mm: 4.30...4.50
mm: (3.60...5.20) electromagnet Volt: 12
Del. quantity cm3/: 9.00...13.00
1000S.: (7.00...15.00)
8th speed 1/min: 2400
Charge press. hPa: 750
Shutoff Shutoff electromagnet Volt: 12 4th speed 1/min: 750 4th speed Charge press electromagnet Volt: 12
Del. quantity cm3/: 32.50...42.50
1000S.: (31.50...43.50)
9th speed 1/min: 2100
Charge press. hPa: 750
Shutoff hPa: 750 mm: 1.50...2.10 mm: (1.00...2.60) TD travel Shutoff electromagnet Volt: 12 electromagnet Volt: 12
Del. quantity cm3/: 42.00...44.00
1000S.: (40.80...45.20)
12th speed 1/min: 1250
Charge press. hPa: 750
Shutoff Supply-pump pressure characteristic: 1st speed 1/min: 750 Charge press. hPa: 750 Supply-pump pressure bar: 4.30...4.90 Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: 750 Charge press. Supply-pump 20th speed 1 Charge press. Shutoff pressure Shutoff bar: 5.40...6.00 electromagnet Volt: 12 Del. quantity cm3/: 42.80...45.80 1000s.: (42.10...46.50) electromagnet Volt: 12 3rd speed 1/min: 2100 Charge press. hPa: 750 21th speed 1/min: 450

006

Charge press. hPa: Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.:	12	+ 3	TD-travel : - 1.92.10 "  difference mm: -  Shutoff electromagnet Volt: 12  2nd speed 1/min: 1250  TD-travel : - 2.52.90"
Mech. shutoff:		1	TD-travel : -2.52.90' difference mm: -
Electr. shutoff:		1 5	SP pressdif.measurement: compa di mandara (FP):
1st speed 1/min: Del. quantity cm3/:		+ (	lst speed     1/min: 1250 Charge press.   hPa: -
Shutoff electromagnet volt:		† 5	Supply pump- pressure : -1.01.40 ' Shutoff
Damper set qty.:		+	electromagnet Voit: 12
LFG-setting:		‡ <i>f</i>	Automatic starting fuel delivery:
solidale con carcas Idle delivery:	sa:	+ 5	lst speed
1st speed 1/min: Shutoff		+ 6	electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000S.: (35.0055.00
electromagnet Volt: Del. quantity cm3/: 1000S.:	12 16.0018.00 (13.0021.00)	+ 2	2nd speed 1/min: 380 Shutoff
High Idle:		+ 6	electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000S.: (31.0051.00
	12	+ 8	3rd speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.0043.00 1000S.: (32.5047.50)
Residual:		† 5	Shutoff electromagnet:
1.Rotacao 1/min: Shutorf electromagnet Volt:		+	Cut-in min voltage : 10.0
Del. quantity cm3/:	7.008.00 (5.509.50)	+	Rated voltage : 12.0
Load-dependent stam Injqty.dif.measure	t of delivery: ement:	+	Mounting and assembly dimensions: Designation
1st speed 1/min: Injqty. cm3/: difference 1000S.: Shutoff electromagnet Volt: 2nd speed 1/min:	1250 - 7.011.0 " - (5.013.0) 12 1250 MAX.3.0 '	+	
TD-travel dif.measur correttore anticipo 1st speed 1/min: Charge press. hPa:	rement: iniezione (SV): 1250	T + + + + + + + + + + + + + + + + + + +	•

CO7

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet VWW Edition : 05.03.93 replaces Calibrating oil : ISO-4113 Injection pump : VE4/9F2300R433-14 : 0 460 494 307 Type number Customer Part-No. : Customer-specific information Customer : 1,9 l WK UD Golf Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return temp. with thermometer : 40.00...48.00 Electronically : 42.00...58.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 388 901 000 assembly Opening Pressure bar: 147.00...150.00 Test inj. tubing : 1 680 750 000 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840 Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing device travel 1/min: 1250 Charge press. hPa: 750 Setting value mm: 4.30...4.50

1/min: 1250 Speed hPa: 750 Charge press Setting value bar: 5.40...6.00 Shutoff electromagnet Voit: 12 Full-load del. with charge press.: Speed 1/min: 1250 Charge press. hPa: 750 Del. quantity cm3/ 1000s.: 50.00...51.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000s.: (3.0) Full-load del. w/out charge press.: 1/min: 450 Speed Del. quantity cm3/ 1000s.: 37.20...43.20 Shutoff electromagnet Volt: 12 Low-idle speed regulation 1/min: 450 Speed Del. quantity cm3/ 1000s.: 16.0...18.0 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.0 10008.: (3.0) Residual-Delivery Setting 1/min: 550 Speed Del. quantity cm3/ 1000S.: 7.00...8.00 Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2600 Charge press hPa: 750 Del. quantity cm3/ 1000s.: 9.00...13.00 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: -mind 1000s.: 40.0 Shutoff electromagnet Volt: 12

**cos** 

Shutoff

electromagnet Volt: 12

Supply-pump pressure

+	Supply-pump
Load-dependent start of delivery: Injqty.dif.measurement:	pressure bar: 7.408.00 Shutoff
Speed 1/min: 1250 +	electromagnet Volt: 12
Charge press hPa: 750 Inj.—qty. cm3/	Overlow quantity at overflow valve:
difference 1000s.: - 4.56.5 # + Shutoff	1st speed
electromagnet Volt: 12	Shutoff
SP press.—dif.measurement pompa di mandata (FP)	electromagnet Volt: 12 Overflow : 41.7083.40
1.Speed 1/min: 1250 +	quantity cm3/10s: (27.8097.30) 2nd speed 1/min: 2100
Charge press hPa: 750 + Supply pump +	2nd speed 1/min: 2100 Charge press. hPa: 750
pressure +	Shutoff
difference bar: - 0.10.3 #	electromagnet Volt: 12 Overflow : 55.60139.90
electromagnet Volt: 12	quantity cm3/10s: (41.70154.90)
Inspection-pump test specifications Test specifications in parentheses	Delivery-quant. and breakaway char.
Timing device characteristic:	2nd speed 1/min: 2750 Charge press. hPa: 750
2nd speed 1/min: 2100 +	Shutoff
Charge press hPa: 750	electromagnet Volt: 12
TD travel mm: 8.008.60 + mm: (7.509.10)	Del. quantity cm3/: 0.006.00 1000s.: (0.006.00)
Shutoff +	5th speed 1/min: 2600
electromagnet Volt: 12 +	Charge press. hPa: 750
3rd speed 1/min: 1250 + Charge press hPa: 750 +	Shutoff
TD travel mm: 4.304.50 +	electromagnet Volt: 12 Del. quantity cm3/: 9.0013.00
mm: (3.605.20) + Shutoff	1000S.: (7.0015.00) 8th speed
electromagnet Volt: 12	Charge press. hPa: 750
4th speed 1/min: 750 +	Shutoff
Charge press hPa: 750 +	electromagnet Volt: 12 Del. quantity cm3/: 32.5042.50
TD travel mm: 1.502.10 + mm: (1.002.60)	Del. quantity cm3/: 32.5042.50
Shutoff	1000S.: (31.5043.50) 9th speed 1/min: 2100
electromagnet Volt: 12	Charge press. hPa: 750
Symplectic property of the section o	Shutoff
Supply-pump pressure characteristic:	electromagnet Volt: 12 Del. quantity cm3/: 42.0044.00
1st speed 1/min: 750 +	1000s.: (40.8045.20)
Charge press. hPa: 750 +	12th speed
Supply-pump +	Charge press. hPa: 750
pressure bar: 4.304.90 + Shutoff	Shutoff
electromagnet Volt: 12	electromagnet Volt: 12 Del. quyntity cm3/: 50.0051.00
2nd speed 1/min: 1250 +	1000\$.: (48.3052.70)
pressure bar: 4.304.90 Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: 750 Supply-pump	20th speed 1/min: 700 Charge press. hPa: 750
pressure bar: 5.406.00	Shutoff electromagnet Volt: 12
electromagnet Volt: 12	Del. quantity cm3/: 42.8045.80
3rd speed 1/min: 2100 +	10008.: (42.1046.50)
Charge press. hPa: 750	21th speed 1/min: 450

C09

Charge press. hPa: — Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.2043.20	correttore anticipo iniezione (SV):  1st speed 1/min: 1250 Charge press. hPa: - TD-travel :- 1.902.10" difference mm: - Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Charge press. hPa: - TD-travel :- 2.52.9 ' difference mm: - (2.13.3) '  SP pressdif.measurement: pompa di mandata (FP): 1st speed 1/min: 1250 Charge press. hPa: - Supply pump- pressure :- 1.001.40' difference bar: - Shutoff electromagnet Volt: 12  Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0  1st speed 1/min: 1000 Charge press. hPa: 750
Shutoff electromagnet Volt: 12 Del. quantity cm3/: 16.0018.00 1000s.: (13.0021.00)	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 27.0029.00 1000S: (25.0031.00)
Residual:	Automatic starting fuel delivery:
1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 7.008.00 1000S.: (5.509.50)	1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0055.00 1000s.: (35.0055.00)
Load-dependent start of delivery: Injqty.dif.measurement:	2nd speed 1/min: 380 Shutoff
1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/ : - 7.011.0 " difference 1000S.: - (5.013.0) Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 Injqty. cm3/: MAX. 3.00 ' difference 1000S.: - Shutoff electromagnet Volt: 12	electromagnet Volt: 12 Del. quantity cm3/: 31.0051.00 1000S.: (31.0051.00)  3rd speed 1/min: 100 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.0043.00 1000S.: (32.5047.50)  Shutoff electromagnet: Cut-in
TD-travel dif.measurement:	min voltage : 10.0
C10	

Rated voltage : 12.0

Mounting and assembly dimensions:

Designation K KF MS Ya Yb mm: 3.6...3.8 mm: K-OT mm: 1.1...1.5 mm: 37.6...41.6 mm: 49.9...62.8

Remarks:

C11

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 05.03.93 replaces Calibrating oil : ISO-4113 : VE4/9F2250R472 : 0 460 494 309 Injection pump Type number Customer Part-No. : Customer-specific information Customer : XUD 9 TE-Y CATA Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return temp. with thermometer : 40.00...48.00 : 42.00...50.00 Electronically Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Opening | Pressure bar: 130.00...133.00 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 x Length Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel Speed 1/min: 1500 Charge press. hPa: 1000 Setting value mm: 3.90...4.30 Setting value Shutoff electromagnet Volt: 12

Speed 1/min: 1500 Charge press hPa: 1000 Setting value bar: 5.40...6.00 Shutoff electromagnet Volt: 12 Full-load del. with charge press.: Speed 1/min: 1250 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 53.50...54.50 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.0 1000S.: (3.0) Full-load del. w/out charge press.: 1/min: 500 Speed Del. quantity cm3/ 1000s.: 37.50...38.50 Shutoff electromagnet Volt: 12 Low-idle speed regulation 1/min: 400 Del. quantity cm3/ 1000S.: 12.0...14.0 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000S.: (3.0) Residual-Delivery Setting Speed 1/min: 500 Del. quantity cm3/ 1000s.: 6.00...7.00 Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2575 Speed Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 12.00...16.00 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 150 Del. quantity cm3/: 37.00...67.00 mind 1000s.: 37.00 Shutoff electromagnet Volt: 12

Supply-pump pressure

Supply-pump pressure Load-dependent start of delivery: bar: 6.50...7.10 Inj.-qty.dif.measurement: Shutoff electromagnet Volt: 12 1/min: 1500 Charge press hPa: -Overlow quantity at overflow valve: Inj.—aty. difference cm3/ Charge press. hPa: 1000 Shutoff 1000s.: MAX.34.0..36.0# Shutoff electromagnet Volt: 12 TD-travel dif.measurement electromagnet Volt: 12 Overflow: 41.70...83.40 quantity: cm3/10s: (26.70...98.40 2nd speed: 1/min: 2150 : 41.70...83.40 quantity cm3/10s: (26.70...98.40) 2nd speed 1/min: 2150 Charge press. hPa: 1000 Shutoff correttore anticipo iniezione (SV) 1.Speed 1/min: 1500 Charge press TD-travel hPa: difference mm: MAX.2.5..2.7# Shutoff electromagnet Volt: 12 Overflow : 55.60...139.00 electromagnet Volt: 12 quantity cm3/10s: (40.60...154.00) Inspection pump test specifications Test specifications in parentheses Delivery-quant. and breakaway char.: Timing-device characteristic: 1/min: 750\* 1nd speed Charge-air pressure-setting point hPa: 350 LDA-stroke mm: 5.9 1/min: 2000 hPa: 1000 2nd speed Charge press TD travel mm: 6.10...6.90 mm: (5.80...7.20) Shutoff electromagnet Volt: 12
Del. quantity cm3/: 46.00...47.00
1000S.: (43.50...49.50)
2nd speed 1/min: 2750
Charge press. hPa: 1000
Shutoff Shutoff electromagnet Volt: 12
3rd speed 1/min: 1500
Charge press hPa: 1000
TD travel mm: 3.90...4.30
mm: (3.40...4.80) electromagnet Volt: 12
Del. quantity cm3/: 0.00...6.00
1000s.: (0.00...6.00)
5th speed 1/min: 2575 Shutoff electromagnet Volt: 12 4th speed 1/min: 900 hPa: 1000 Charge press TD travel mm: 0.80...1.60 mm: (0.50...1.90) Charge press. hPa: 1000 Shutoff electromagnet Volt: 12
Del. quantity cm3/: 12.00...16.00
1000S.: (10.00...18.00)
8th speed 1/min: 2375
Charge press. h?a: 1000
Shutoff Shutoff electromagnet Volt: 12 Supply-pump pressure characteristic: Charge press. hPa: 1000 Supply-pump pressure electromagnet Volt: 12
Del. quantity cm3/: 33.00...43.00
1000S.: (32.00...44.00)
9th speed 1/min: 2150
Charge press. hPa: 1000
Shutoff bar: 3.90...4.50 pressure Shutoff electromagnet Volt: 12 2nd speed 1/min: 1500 Charge press. hPa: 1000 electromagnet Volt: 12
Del. quantity cm3/: 49.50...51.50
1000S.: (48.30...52.70)
10th speed 1/min: 2000
Charge press. hPa: 1000
Shutoff Supply-pump pressure bar: 5.40...6.00 Shutoff electromagnet Volt: 12 3rd speed 1/min: 2000 Charge press. hPa: 1000 electromagnet Volt: 12

Del. quantity cm3/: 1000s.: 12th speed 1/min:	(49.8054.20)	‡	1.Rotacao 1/min: 500 Shutoff
Charge press. hPa: Shutoff	1000	+	electromagnet Volt: 12 Del. quantity cm3/: 6.007.00
electromagnet Volt: Del. quyntity cm3/: 1000s •	12 53.5054.50 (51.8056.20)	İ	1000S.: (4.508.50)  Load-dependent start of delivery:
18th speed 1/min: Charge press. hPa:	5 <b>0</b> 0	Ī	Inj.—qty.dif.measurement:
Shutoff electromagnet Volt: Del. quantity cm3/:	37,5038,50	‡	1st speed 1/min: 1500 Charge press. hPa: - Injqty. cm3/ : MAX.
1000s.: 20th speed 1/min: Charge press. hPa: Shutoff	500 1000	Ŧ	difference 1000s.: 2.008.00 "Shutoff electromagnet Volt: 12
electromagnet Volt: Del. quantity cm3/:	12 46.5049.50 (45.0051.00)		TD-travel dif.measurement: correttore anticipo iniezione (SV) 1st speed 1/min: 1500
Mech. shutoff: Mech. Abstellung:		Ī	Charge press. hPa: - TD-travel : MAX. difference mm: 0.702.10 " Shutoff
1st speed 1/min: Charge press. hPa: Del. quantity cm3/:	1000 6.003.00	+++++++++++++++++++++++++++++++++++++++	electromagnet Volt: 12 2nd speed   1/min: 1500 Charge press. hPa: -
Shutoff electromagnet volt:	(0.003.00)	‡	TD-travel : 0.000.60" difference mm: ALFB / 12 V
Electr. shutoff:		‡	SP press. dif.measurement: pompa di mandata (FP):
1st speed 1/min: Del. quantity cm3/:		<del> </del>	1st speed 1/min: 1500 Charge press. hPa: - Supply pump-
Shutoff electromagnet volt:		Ŧ	pressure : - 1.31.9 " difference bar: - Shutoff
Damper set qty.:		‡	electromagnet Volt: 12
LFG-setting: solidale con carcas Idle delivery:	sa:	† †	Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF)
1st speed 1/min: Shutoff	400	Ī	gaz d'échappement-ARF) Spacing mm: 8.5
electromagnet Volt: Del. quantity cm3/:	12 12.0014.00 (9.0017.00)	I I I	1st speed 1/min: 600 Charge press. hPa: 1000 Shutoff
High Idle:		‡	electromagnet Volt: 12 Del. quantity cm3/: 27.0035.0 1000S.: MIKROSCHALTER
1st speed 1/mi: Shutoff		+	Automatic starting fuel delivery:
electromagnet Volt: Del. quantity cm3/: 1000s.:	11.0013.00 (8.0016.00)	‡	2nd speed 1/min: 380
Residual:		‡	Shutoff electromagnet Volt: 12
C14			

Del. quantity cm3/: 25.00...45.00 (25.00...45.00) 3rd speed Shutoff 1/min: 200 electromagnet Volt: 12 Del. quantity cm3/: 50.00...56.00 1000S.: (45.50...60.50) 4th speed 1/min: 150 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.00...67.00 1000s.: (37.00...67.00) Shutoff electromagnet: Cut-in min voltage Rated voltage : 10.0 : 12.0 Mounting and assembly dimensions: Designation mm: 3.2...3.4 mm: K-OT mm: 1.1...1.5 mm: 18.8...22.8 mm: 78.0...92.0 K KF MS Υā Yb Remarks: :

BOSCH-INJ.-PUMP TEST SPECIFICATIONS 1/min: 1250 hPa: 1000 Charge press Note inst. in remarks column Setting value bar: 5.00...5.60 Shutoff Test scheet Edition : PEU 2.1 F8 : 05.03.93 electromagnet Volt: 12 replaces Full-load del. with charge press.: Calibrating oil : ISO-4113 Speed 1/min: 1250 Charge press. hPa: 1000 : VE4/9F2150R474 Injection pump : 0 460 494 310 Type number Del. quantity cm3/ 1000s.: 61.00...62.00 Customer Part-No. : Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (2.5) Customer specific information Customer : PSA Engine : XUD11ATE-L BVM Full-load del. w/out charge press.: TEST BENCH REQUIREMENTS 1/min: 500 Speed Del. quantity cm3/ 1000s.: 42.50...43.50 Overflow restricti: 1 463 456 303 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (2.5) Calibrating-oil return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Low-idle speed regulation Inlet press., bar : 0.30...0.40 1/min: 325 Calibrating nozzle-holder Del. quantity cm3/ 1000s.: 12.0...14.0 : 1 688 901 022 assembly Shutoff Opening. electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000s.: (3.0) bar: 130.00...133.00 Pressure Test inj. tubing : 1 680 750 073 Residual-Delivery Setting Outside diameter : 6.00 x Wall thickness : 2.00 Speed 1/min: 550 Del. quantity cm3/ 1000s.: 2.50...3.50 x Length mm: 450 Shutoff Start of delivery electromagnet Volt: 12 Prestroke mm: -(from BDC): -Full-load speed regulation Injection-pump setting values Test specifications in parentheses Speed 1/min: 2250 Charge press hPa: 1000 Del. quantity cm3/ 1000S.: 49.00...55.00 Timing-device travel Shutoff 1/min: 1250 electromagnet Volt: 12 Charge press. hPa: 1000 Setting value mm: 2.30...2.70 Start: Shutoff Speed 1/min: 100 Del. quantity cm3/: 70.00...80.00 mind 1000s.: 70.00 electromagnet Volt: 12 Supply-pump pressure

**C16** 

Shutoff electromagnet Volt: 12	† Overflow : 55.60139.00 † quantity cm3/10s: (40.60154.00)
Inspection-pump test specifications Test specifications in parentheses	Delivery-quant. and breakaway char.:
Timing-device characteristic:	ind speed 1/min: 750*
2nd speed 1/min: 2000 Charge press hPa: 1000 TD travel mm: 5.506.30	+ Charge-air pressure-setting + point hPa: 400 + LDA-stroke mm: 7.1 + Shutoff
mm: (5.206.60) Shutoff	+ electromagnet Volt: 12
electromagnet Volt: 12 3rd speed   1/min: 1250	Del. quantity cm3/: 56.0057.00 1000s.: (53.5059.50) 2nd speed 1/min: 2700
Charge press hPa: 1000 TD travel mm: 2.302.70	+ Charge press. hPa: 1000 + Shutoff
mm: (1.803.20) Shutoff	+ electromagnet Volt: 12 + Del. quantity cm3/: 5.0011.00
electromagnet Volt: 12 4th speed	1000s.: (4.0012.00) 3rd speed 1/min: 2400
Charge press hPa: 1000 TD travel mm: 0.901.70	+ Charge press. hPa: 1000 + Shutoff
mm: (0.602.00) Shutoff	electromagnet Volt: 12 Del. quantity cm3/: 33.5040.50
electromagnet Volt: 12	1000s.: (33.0041.00) 5th speed 1/min: 2250
Supply-pump pressure characteristic:	Charge press. hPa: 1000 Shutoff
1st speed 1/min: 1000 Charge press. hPa: 1000	electromagnet Volt: 12  Del. quantity cm3/: 49.0055.00  1000S.: (48.0056.00)
Supply-pump pressure bar: 4.304.90 Shutoff	9th speed 1/min: 2000 Charge press. hPa: 1000
electromagnet Volt: 12 2nd speed 1/min: 1250	Shutoff electromagnet Volt: 12
Charge press. hPa: 1000 Supply—pump	Del. quantity cm3/: 55.0058.00 1000s.: (54.2058.80)
pressure bar: 5.005.60 Shutoff	10th speed 1/min: 1000 Charge press. hPa: 1000
electromagnet Volt: 12 3rd speed	+ Shutoff + electromagnet Volt: 12
Charge press. hPa: 1000 Supply-pump	† Del. quantity cm3/: 60.5063.50 † 1000s.: (59.5064.50)
pressure bar: 7.107.70 Shutoff	† 12th speed 1/min: 1250 † Charge press. hPa: 1000
electromagnet Volt: 12	+ Shutoff + electromagnet Volt: 12
Overlow quantity at overflow valve:	t Del. quyntity cm3/: 61.0062.00 to 10005.: (59.2063.80)
1st speed	+ 18th speed 1/min: 500 + Charge press. hPa: - + Shutoff
electromagnet Volt: 12 Overflow : 41.7083.40	electromagnet Volt: 12 Del. quantity cm3/: 42.5043.50
quantity cm3/10s: (26.7098.40) 2nd speed	
Charge press. hPa: - Shutoff	10005:: (40.7045.30)  20th speed 1/min: 500  Charge press. hPa: 1000  Shutoff electromagnet Volt: 12
electromagnet Volt: 12	electromagnet Volt: 12
c17	

Del. quantity cm3/: 60.00...63.00 1000S.: (59.00...64.00) Charge press. hPa: 1000 Shutoff Mech. shutoff: electromagne: Volt: 12 Del. quada tr cm3/: 15.50...16.50 1000s.: (13.00...19.00) Mech. Abstellung: 1sr speed 1/min: 2000 Charge press. hPa: 1000 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Automatic starting fuel delivery: Shutoff electromagnet volt: 12 1/min: 325 2nd speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 37.00...44.00 1000s.: (36.50...44.50) Electr. shutoff: 1st speed 1/min: 325 Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) 1/min: 200 3rd speed Shutoff Shutoff electromagnet Volt: 12 Del. quantity cm3/: 76.00...78.00 1000s.: (74.50...79.50) electromagnet volt: -Damper set qty.: LFG-setting: 4th speed 1/min: 100 solidale con carcassa: Idle delivery: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 70.00...80.00 1000S.: (68.00...82.00) 1/min: 325 1st speed Shutoff Shutoff electromagnet: Cut-in : 10.0 min voltage Shutoff Rated voltage electromagnet Volt: 12 Del. quantity cm3/: 5.00...11.00 1000s.: (5.00...11.00) Mounting and assembly dimensions: Designation mm: 3.2...3.4 mm: 5.2...5.6 mm: 0.9...1.3 mm: 7.1 mm: MIKROSCH. High Idle: K KF 1st speed Shutoff 1/mi: 450 MS LDA stroke electromagnet Volt: 12 Del. quantity cm3/: 11.00...13.00 1000S.: (9.00...15.00) ALDA stroke mm: 12.0 MM mm: 34.3...38.3 mm: 73.7...88.3 Υa Residual: Remarks: 1.Rotacao 1/min: 550 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.50...3.50 1000s.: (0.50...5.50) Operate control lever after each manifold-pressure compensator pressure change. Part-load del.at 3rd inj.-qty. \* Correction at adjusting nut terza fermo della portata stop (EGR set) scarico) (ARF) For adjustment of switching point gaz d'échappement-ARF) (EGR valve), include 12.0 mm spacer at third fuel-delivery stop. Spacing mm: 12.0 C18

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 08.12.92 replaces : ISO 4113 Calibrating oil : VE4/9F2250R423-2 Injection pump : 0 460 494 326 Type number Customer-specific information Customer : RNUR Engine : J8S - 604/610 CA TEST BENCH REQUIREMENTS Calibrating oil with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Openina bar: 130...133 Pressure Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450 Start of delivery Prestroke mm: -(from BDC): -Injection pump setting values Test specifications in parentheses Timing-device travel 1/min: 1250 Speed Charge press. hPa: 1000 Setting value mm: 3.60...4.00 Shutoff electromagnet Volt: 12 Supply-pump pressure 1/min: 1250

Shutoff electromagnet Volt: 12 Full-load del. with charge press.: 1/min: 1250 Speed Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 51.00...52.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2,5 1000S.: (3.0) Full-load del. w/out charge press.: 1/min: 750 Del. quantity cm3/ 1000s.: 38.50...39.50 Shutoff electromagnet Volt: 12 Low-idle speed regulation 1/min: 425 Speed Charge press hPa: -Del. quantity cm3/ 1000s.: 4.50...8.50 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000s.: (2.5) Residual-Delivery Setting 1/min: 500 Speed Charge press. hPa: Del. quantity cm3/ 1000S.: 3.5...7.5 Shutoff electromagnet Volt: 12 Full-load speed regulation Speed 1/min: 2500 Charge press hPa: 1000 Del. quantity cm3/ 1000S.: 7.50...13.50 electromagnet Volt: 12 Start: 1/min: 100 Speed Charge press hPa: -Del. quantity cm3/: -mind 1000s.: 50.0 Shutoff electromagnet Volt: 12

Setting value bar: 5.10...5.70

Speed

Charge press hPa: 1000

Load-dependent start of delivery: Injqty.dif.measurement:	Supply-pump pressure bar: 4.405.00 Shutoff
Speed 1/min: 1250	electromagnet Volt: 12
Charge press hPa: - Inj. qty. cm3/	Overlow quantity at overflow valve:
difference 1000s.: - 4.506.50 #	1st speed 1/min: 750 Charge press. hPa: 1000
electromagnet Volt: 12	Shutöff
SP pressdif.measurement pompa di mandata (FP)	electromagnet Volt: 12 Overflow : 41.683.3
1. Speed 1/min: 1250	Overflow : 41.683.3 quantity cm3/10s: (26.698.3) 2nd speed 1/min: 2115
Supply pump +	Charge press. hPa: 1000
difference bar: - 0.10.3 #	Shutoff electromagnet Volt: 12
Shutoff electromagnet Volt: 12	Cverflow : 55.5138.8 quantity cm3/10s: (40.5153.8)
Inspection—pump test specifications	•
Test specifications in parentheses	Delivery quant. and breakaway char.
Timing-device characteristic:	1nd speed 1/min: 750* Charge-air pressure-setting
1st speed 1/min: 2125	point hPa: 300
Charge press hPa: 1000 + TD travel mm: 6.807.60 +	LDA-stroke mm: 6.0 Shutoff
mn: (6.507.90)	electromagnet Volt: 12
electromagnet Volt: 12 2nd speed 1/min: 1250	Del. quantity cm3/: 45.5046.50 1000s.: (43.0049.00)
Charge press hPa: 1000 +	2nd speed 1/min: 2/00
TD travel mm: 3.604.00 + mm: (3.104.50)	Charge press. hPa: 1000 Shutoff
Shutoff	electromagnet Volt: 12
electromagnet Volt: 12 3rd speed 1/min: 1000	Del. quantity cm3/: 0.003.60 1000s.: -
Charge press hPa: 1000 +	3rd speed 1/min: 2500
TD travel mm: 2.303.10 + mm: (2.003.40)	Charge press, hPa: 1000 Shutoff
Shutoff electromagnet Volt: 12	electromagnet Volt: 12 Del. quantity cm3/: 7.5013.50
<u> </u>	1000S.: (6.5014.50)
Supply-pump pressure characteristic:	4th speed 1/min: 2350 Charge press. hPa: 1000
1st speed 1/min: 2125	Shutoff
Charge press. hPa: 1000 + Supply-pump	electromagnet Volt: 12 Del. quantity cm3/: 28.4036.40
pressure bar: 7.508.10	1000s.: (27.4037.40)
electromagnet Volt: 12	5th speed 1/min: 2125 Charge press. hPa: 1000
2nd speed 1/min: 1250 +	Shutoff
Supply-pump +	electromagnet Volt: 12 Del. quantity cm3/: 48.1050.10
pressure bar: 5.105.70 + Shutoff	1000S.: (46.8051.40) 6th speed 1/min: 1625
electromagnet Volt: 12	Charge press. hPa: 1000
3rd speed 1/min: 1000 + Charge press. hPa: 1000 +	Shutoff electromagnet Volt: 12
T	CCCCT Glag let VOCC. 12

Del. quantity cm3/:	48.9050.90	+	1.Rotacao 1/min: 500
7th speed 1/min:	(47,6052,20)	†	Shutoif
Charge press. hPa:		Ť	electromagnet Volt: 12 Del. quantity cm3/: 3.507.50
Shutoff	_	Ī	1000s.: -
	12	Ι	10003.: -
electromagnet Volt: Del. quantity cm3/:	3K KN 39 KN	I	Load-dependent start of delivery:
10005	(35.1041.10)	Ţ	Inj.—qty.dif.measurement:
8th speed 1/min:		1	inj. qcy.arr.measurement.
Charge press. hPa:	1000	1	1st speed 1/min: 1250
Shutoff	.555	1	Charge press. hPa: -
electromagnet Volt:	12	1	Charge press. hPa: - Inj. qty. cm3/ : -7.511.5
Del. quantity cm3/:	51.0052.00	+	difference 1000s.: -
1000s.:	(49.2053.80)	4	Shutoff
1000\$.: 9th speed 1/min:	1000	+	electromagnet Volt: 12
Charge press. hPa:	1000	1	2nd speed 1/min: 1250
Shutoff		+	Charge press. hPa: -
electromagnet Volt:	12		Ini.—aty. cm3/: MAX.
Del. quantity cm3/:	50.6053.60	+	difference 1000s.: 2.008.00 "
1000\$.:	(49.1055.10)	+	
10th speed 1/min:		+	TD-travel dif.measurement:
Charge press. hPa:	-	+	correttore anticipo injezione (SV)
Shutoff	••	+	1st speed
electromagnet Volt:	12	÷	Charge press. hPa: -
Del. quantity cm3/:	38,5039.50	+	TD-travel : - 1.21.4
1000S.:	(36.0042.00)	+	aitterence mm: -
Maraha ahasa 66		+	Shutoff
Mech. shutoff:		+	electromagnet Volt: 12
		+	2nd speed 1/min: 1250
Electr. shutoff:		<b>†</b>	Charge press. hPa: -
1 mb man and 1 / 1 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 /	/25	+	TD-travel : - 1.92.7 "
1st speed 1/min:		†	difference mm: -
Charge press. hPa:	ñ 00 7 00	+	Shutoff
Del. quantity cm3/: 1000s.:	0.003.00	Ť	electromagnet Volt: 12
Shutoff	<del>-</del>	T	Automatic stanting fund delivers
electromagnet volt:	مب	Ι	Automatic starting fuel delivery:
ececti dilagnet vott.		Ι	1st speed 1/min: 350
Damper set qty.:		Ι	Shutoff
banper see quy		I	
LFG-setting:		1	electromagnet Volt: 12 Del. quantity_cm3/: 20.0050.00
solidale con carcas	sa:	Ţ	1000s.: -
Idle delivery:	<b>.</b>	1	10005.
		1	2nd speed 1/min: 250
1st speed 1/min:	425	+	Shutoff
Shutoff		+	electromagnet Volt: 12
electromagnet Volt:	12	+	Del. quantity cm3/: 50.0090.00
Del. quantity cm3/:	4,508,50	+	1000s.: -
1000s.:	(2.5010.50)	+	
		+	3rd speed 1/min: 100
High Idle:		+	Shutoff
		+	electromagnet Volt: 12
1st speed 1/mi:	500	+	Del. quantity cm3/: 50.0090.00
Shutoff	40	+	1000s.: -
electromagnet Volt:	12	†	
Del. quantity cm3/:	6.0010.00	†	Shutoff electromagnet:
10005.:	(4.0012.00)	†	Contraction
Residual:		†	Cut-in
nes radat.		Ŧ	min voltage : 10.0
		+	Rated voltage : 12.0

Mounting and assembly dimensions:

Designation
K mm: 3.6...3.8
KF mm: K-OT
MS mm: 1.0...1.4
SVS max. mm: 2.8
LDA stroke mm: 6.0
ALDA stroke fH mm: 6.0 MM
Ya mm: 38.8.../2.8
Yb mm: 36.2...45.8
\* Correction at adjusting nut emarks:

Operate control lever after each manifold pressure compensator pressure change.

Screw out residual-quantity adjusting screw 1 mm after setting pump.

On initial measurement, screw in residual—quantity adjusting screw 1 mm.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : REN Edition : 08.12.92 replaces Calibrating oil : ISO 4113 Injection pump : VE4/9F2250R423-3 Type number : 0 460 494 327 Customer-specific information Customer Engine : J8S - 604/610 CA TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Opening bar: 130...133 Pressure Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length Start of delivery Prestroke mm: -(from BDC): -Injection pump setting values Test specifications in parentheses Timing-device travel Speed 1/min: 1250 Charge press. hPa: 1000 Setting value mm: 3.60...4.00 Shutoff electromagnet Volt: 12 Supply-pump pressure

1/min: 1250

Speed

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Charge press hPa: 1000 Setting value bar: 5.10...5.70 Shutoff electromagnet Volt: 12 Full-load del. with charge press.: Speed 1/min: 1250 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 51.00...52.00 Shutoff electromagnet Volt: 12 cm3/: 2,5 1000s.: (3.0) Dispersion Full-load del. w/out charge press.: Speed 1/min: 750 Del. quantity cm3/ 1000s.: 38.50...39.50 Shutoff electromagnet Volt: 12 Low-idle speed regulation 1/min: 425 Charge press hPa: -Del. quantity cm3/ 1000s.: 4.50...8.50 electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000S.: (2.5) Residual-Delivery Setting Speed 1/min: 500 Charge press. hPa: -Del. quantity cm3/ 1000s.: 3.5...7.5 Shutoff electromagnet Volt: 12 Full-load speed regulation Speed 1/min: 2500 Charge press ... Del. quantity cm3/ 1000S.: 7.50...13.50 Charge press hPa: 1000 electromagnet Volt: 12 Start: 1/min: 100 Speed Charge press hPa: -Del. quantity cm3/: -1000s.: 50.0 mind

Shutoff electromagnet Volt: 12	t	Charge press. hPa: Supply-pump	1000
<u> </u>	+	pressure bar:	4.405.00
Load-dependent start of delivery: Injqty.dif.measurement:	Ī	Shutoff electromagnet Volt:	12
Speed 1/min: 1250 Charge press hPa: -	+	Overlow quantity at	overflow valve:
Inj. qty. cm3/ difference 1000s.: - 4.506.50 # Shutoff	<u> </u>	1st speed 1/min: Charge press. hPa: Shutoff	750 1000
electromagnet Volt: 12 SP press.—dif.measurement	Ì	electromagnet Volt: Overflow :	12
pompa di mandata (FP)	+	quantity cm3/10s:	(26.698.3)
1.Speed 1/min: 1250 Charge press hPa: -	1	2nd speed 1/min: Charge press. hPa:	
Supply pump	+	Shutoff	
difference bar: - 0.10.3 #	Ţ	electromagnet Volt: Overflow :	55.5138.8
Shutoff electromagnet Volt: 12	‡	quantity cm3/10s: Shutoff	(40.5153.8)
Inspection pump test specifications	Ì	electromagnet Volt:	12
Test specifications in parentheses	Ŧ	Delivery-quant. and	breakaway char.:
Timing-device characteristic:	+	1md amount 1/min.	750.
1st speed 1/min: 2125	Ţ	1nd speed 1/min: Charge-air pressure	
Charge press hPa: 1000	1	point hPa:	300
TD travel nm: 6.807.60	ł		
mm: (6.507.90)	I	LDA-stroke mm: Shutoff	6.0
electromagnet Volt: 12	+	electromagnet Volt:	12
2nd speed 1/min: 1250	$\perp$	Del quantity rm3/:	45.50 46.50
Charge press hPa: 1000	Ĺ	Del. quantity cm3/: 1000s.:	(//3 00 //0 00)
Th tanks! 7 40 / 00	T	20003.1	1700
TD travel mm: 3.604.00 mm: (3.104.50)	+	2nd speed 1/min:	2700 4000
Shutoff	Ī	Charge press. hPa: Shutoff	NUUU
	T		43
electromagnet Volt: 12	†	electromagnet Volt:	12
3rd speed 1/min: 1000	†	Del. quantity cm3/:	
Charge press hPa: 1000	+	1000s.:	
TD travel mm: 2.303.10 mm: (2.003.40)	İ	3rd speed 1/min: Charge press. hPa:	
Shutoff	I	Shutoff	1000
electromagnet Volt: 12	+	electromagnet Volt:	12
Supply-pump pressure characteristic:	Ŧ	Del. quantity cm3/: 10005:	(6.5014.50)
1st speed 1/min: 2125	I	4th speed 1/min:	1000
Charge press. hPa: 1000	T		1000
Simply-pies	T	Shutoff	12
Supply-pump	†	electromagnet Volt:	12
pressure bar: 7.508.10 Shutoff	1	Del. quantity cm3/:	(27.4036.40
electromagnet Volt: 12	+	5th speed 1/min:	(27.4037.40) 2125
2nd speed 1/min: 1250	1	Charge press. hPa:	1000
Charge press. hPa: 1000	1	Shutoff	1000
Supply-pump	1	electromagnet Volt:	12
pressure bar: 5.105.70	1	Del. quantity cm3/:	<u> </u>
Shutoff	1	1000s	(46.8051.40)
electromagnet Volt: 12	1	6th speed 1/min:	1625
3rd speed 1/min: 1000	+	Charge press. hPa:	

Shutoff	F Residual:
electromagnet Volt: 12 Del. quantity cm3/: 48.9050.90 1000\$\text{3.76052,20}	1.Rotacao 1/min: 500 Shutoff
Charge press. hPa: - Shutoff	electromagnet Volt: 12 Del. quantity cm3/: 3.507.50 1000s.: -
electromagnet Volt: 12 Del. quantity cm3/: 36.6039.60 1000S.: (35.1041.10)	Load-dependent start of delivery: Injqty.dif.measurement:
8th speed 1/min: 1250 Charge press. hPa: 1000 Shutoff	1st speed  1/min: 1250 Charge press. hPa: -
electromagnet Volt: 12 Del. quantity cm3/: 51.0052.00 1000s.: (49.2053.80)	Injaty. cm3/ : - 7.511.5' - difference 1000s.: - - Shutoff
9th speed 1/min: 1000 Charge press. hPa: 1000 Shutoff	- electromagnet Volt: 12 - 2nd speed 1/min: 1250 - Charge press. hPa: -
electromagnet Volt: 12 Del. quantity cm3/: 50.6053.60 1000s.: (49.1055.10)	Inj.—qty. cm3/: MAX. difference 1000S.: 2.008.00 "
10th speed 1/min: 750 Charge press. hPa: - Shutoff	TD-travel dif.measurement: correttore anticipo iniezione (SV) 1st speed  1/min: 1250
electromagnet Volt: 12 Del. quantity cm3/: 38.5039.50 1000s.: (36.0042.00)	Charge press. hPa: - TD-travel : - 1.21.4 ' difference mm: -
Mech. shutoff:	Shutoff electromagner Voit: 12
Electr. shutoff:	2nd speed 1/min: 1250 Charge press. hPa: - TD-travel : - 1.92.7 "
1st speed 1/min: 425 Charge press. hPa: - Del. quantity cm3/: 0.003.00 1000s.: -	difference mm: – Shutoff electromagnet Volt: 12
Shutoff electromagnet volt: -	Automatic starting fuel delivery:
Damper set qty.:	- 1st speed 1/min: 350 - Shutoff - electromagnet Volt: 12
LFG-setting: solidale con carcassa: Idle delivery:	- Del. quantity cm3/: 20.0050.00 - 1000S.: -
1st speed 1/min: 425	- 2nd speed 1/min: 250 - Shutoff - electromagnet Volt: 12
electromagnet Volt: 12 Del. quantity cm3/: 4,508,50 1000S.: (2.5010.50)	electromagnet Volt: 12 Del. quantity cm3/: 50.0090.00 1000S.: -
High Idle:	- 3rd speed 1/min: 100 - Shutoff
1st speed 1/mi: 500 Shutoff	electromagnet Volt: 12 - Del. quantity cm3/: 50.0090.00 - 1000S.: -
electromagnet Volt: 12 Del. quantity cm3/: 6.0010.00 1000S.: (4.0012.00)	Shutoff electromagnet:

Cut-in

min voltage : 10.0 Rated voltage : 12.0

Mounting and assembly dimensions:

Designation

K mm: 3.6...3.8
KF mm: K-OT
MS mm: 1.0...1.4
SVS max. mm: 2.8
LDA stroke mm: 6.0
ALDA stroke mm: MIKROSCH.
FH mm: 6.0 MM
Ya mm: 38.8...42.8
Yb mm: 36.2...45.8
\* Correction at adjusting nut emarks:

Operate control lever after each manifold-pressure compensator pressure change.

Screw out residual-quantity adjusting screw 1 mm after setting pump.

On initial measurement, screw in residual-quantity adjusting screw 1 mm.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 08.12.92 replaces : ISO 4113 Calibrating oil : VE4/9F2250R484 : 0 460 494 328 Injection pump Type number Customer-specific information : RNUR Customer : J8S - 778 US 87 Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil with thermometer : 40.00...48.00 : 42.00...50.00 Electronically Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder assembly : 1 688 901 022 Opening bar: 130...133 Pressure Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450 Start of delivery mm: -Prestroke (from BDC): -Injection pump setting values Test specifications in parentheses Timing-device travel Speed 1/min: 1250 Charge press. hPa: 1000 Setting value mm: 3.40...3.80 Shutoff electromagnet Volt: 12 Supply-pump pressure

1/min: 1250

```
Charge press hPa: 1000
Setting value bar: 5.10...5.70
Shutoff
electromagnet Volt: 12
Full-load del. with charge press.:
Speed 1/min: 1250
Charge press. hPa: 1000
Del. quantity cm3/
1000s.: 51.00...52.00
Shutoff
electromagnet Volt: 12
Dispersion cm3/: 2.5
1000S.: (3.0)
Full-load del. w/out charge press.:
                1/min: 750
Speed
Del. quantity cm3/
1000s.: 38.50...39.50
Shutoff
electromagnet Volt: 12
Low-idle speed regulation
                1/min: 425
Speed
Charge press hPa: -
Del. quantity cm3/
1000s.: 4.50...8.50
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 2.5
1000S.: (2.5)
Residual-Delivery Setting
                1/min: 500
Speed
Charge press. hPa: -
Del. quantity cm3/
1000S.: 3.5...7.5
electromagnet Volt: 12
Full-load speed regulation
Speed 1/min: 2500
Charge press hPa: 1000
Del. quantity cm3/
1000s.: 7.50...13.50
Shutoff
electromagnet Volt: 12
Start:
Speed
                1/min: 100
Charge press hPa: -
Del. quantity cm3/: -
mind 1000s.: 50.0
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Speed

Shutoff electromagnet Volt:	12	‡	Charge press. hPa: Supply-pump	
Load-dependent star	t of delivery:	†	pressure bar: Shutoff	4.405.00
Inj.—qty.dif.measur	ement:	I	electromagnet Volt:	12
Speed 1/min: Charge press hPa:		+	Overlow quantity at	overflow valve:
Inj.—qty. cm3/ difference 1000S.: Shutoff		+	1st speed 1/min: Charge press. hPa: Shutoff	
electromagnet Volt: SP press.—dif.measu	rement	1	electromagnet Volt: Overflow	12 41.683.3
pompa di mandata (F	P)	+	Overflow cm3/10s:	(26.698.3)
1. Speed 1/min:		+	2nd speed 1/min:	2115
Charge press hPa: Supply pump	-	‡	Charge press. hPa: Shutoff	
pressure difference bar:	- 0.10.3 #	#	electromagnet Volt: Overflow	55.5138.8
Shutoff electromagnet Volt:	12	+	quantity cm3/10s:	(4J.5153.8)
		Ŧ	Delivery-quant. and	breakaway char.
Inspection-pump tes	t specifications	+		
Test specifications	in parentheses	1	1nd speed 1/min:	750+
Timing device chara	cteristic:	Ŧ	Charge-air pressure	
1st speed 1/min:	2125	I		6.0
Charge press hPa:	1000	1	Shutoff	
TD travel mm:	6.907.70	+	electromagnet Volt:	12
mm:	(6.707.90)	+	Del. quantity cm3/:	45.5046.50
electromagnet Volt: 2nd speed 1/min:	1250	†	2nd speed 1/min:	(43.0049.00)
Charge press hPa:	1000	I	Charge press. hPa:	
TD travel mm:	3.403.80	1	Shutoff	1000
mm:	(3.104.10)	+	electromagnet Volt:	12
Shutoff		+	Del. quantity cm3/:	0.003.00
electromagnet Volt:	12	+	1000s.:	-
3rd speed 1/min: Charge press hPa:	1000	†	3rd speed 1/min:	
TD travel mm:	2.102.90	I	Charge press. hPa: Shutoff	1000
mm:	(1.903.10)	1	electromagnet Volt:	12
Shutoff		+	Del. quantity cm3/:	7.5013.50
electromagnet Volt:	12	+	1000S.:	(6.5014.50)
Supply-pump pressure	e characteristic:	‡	4th speed 1/min: Charge press. hPa: Shutoff	1000 1000
1st speed 1/min:	2125	I	electromagnet Volt:	12
Charge press. hPa: Supply-pump		<u>†</u>	Del. quantity cm3/:	28.4036.40 (27.4037.40)
pressure bar: Shutoff	7.508.10	+	5th speed 1/min: Charge press. hPa:	2125
electromagnet Volt:	12	Ţ	Shutoff	1000
2nd speed 1/min:	1250	+	electromagnet Volt:	12
	1000	+	Del. quantity cm3/:	48.1050.10
Supply-pump	E 10	†	1000s.:	(46.8051.40) 1625
pressure bar: Shutoff	5.105.70	İ	6th speed 1/min: Charge press. hPa:	1025 1000
electromagnet Volt:	12	Ţ	Shutoff	1000
3rd speed 1/min:	1000	+	electromagnet Volt:	12

Del. quantity cm3/:	48.9050.90 (47.6052.20)	<u>†</u>	1.Rotacao 1/min: 500 Shutoff
7th speed 1/min: Charge press. hPa: Shutoff	-	+	electromagnet Volt: 12 Del. quantity cm3/: 3.507.50 1000s.: -
electromagnet Volt: Del. quantity cm3/: 1000S.:	36.6039.60 (35.1041.10)	+++++++++++++++++++++++++++++++++++++++	Load-dependent start of delivery: Injqty.dif.measurement:
8th speed 1/min: Charge press. hPa: Shutoff	1000	‡	1st speed 1/min: 1250 Charge press. hPa: -
electromagnet Volt: Del. quantity cm3/: 1000S.:	51.0052.00 (49.2053.80)	+	Inj. qty. cm3/ : - 6.512.5' difference 1000s.: -(5.513.5) Shutoff
9th speed 1/min: Charge press. hPa: Shutoff	- 1000	+	electromagnet Volt: 12 2nd speed
electromagnet Volt: _Del. quantity cm3/:	12 50.6053.60 (49.1055.10)	1	Inj.—qty. cm3/: MAX. difference 1000S.: 2.008.00 "
10th speed 1/min: Charge press. hPa: Shutoff	750	+	TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed 1/min: 1250
electromagnet Volt: Del. quantity cm3/:	12 38.5039.50 (36.0042.00)	<u> </u>	Charge press. hPa: - TD-travel : - 1.21.4 ' difference mm: -
Mech. shutoff:		‡	Shutoff electromagnet Volt: 12
Electr. shutoff:		‡	2nd speed 1/min: 1250 Charge press. hPa: -
1st speed 1/min: Charge press. hPa: Del. quantity cm3/:	0.003.00	T T	TD-travel : - 1.92.7 " difference mm: - Shutoff electromagnet Volt: 12
1000S.: Shutoff electromagnet volt:		+	Part-load del.at 3rd injqty. terza fermo della portata
Damper set qty.:		+	stop (EGR set) scarico) (ARF)
LFG-setting: solidale con carcass Idle delivery:	sa:	Ŧ	gaz d'échappement-ARF) Spacing mm: 12.0 1st speed 1/min: 825
1st speed 1/min: Shutoff	425	Ŧ	Charge press. hPa: 1000 Shutoff
electromagnet Volt: Del. quantity cm3/: 1000S.:	12 4,508,50 (2,5010.50)	+	electromagnet Volt: 12 Del. quantity cm3/: 25,5026.50 1000S.: (23.5028.50)
High Idle:	12.30	+	Automatic starting fuel delivery:
1st speed 1/mi:	500	+	1st speed 1/min: 350 Shutoff
Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.:	12 6.0010.00 (4.0012.00)	+++++++++++++++++++++++++++++++++++++++	electromagnet Volt: 12 Del. quantity cm3/: 20.0050.00 1000S.: -
Residual:		1	2nd speed 1/min: 250 Shutoff
		+	electromagnet Volt: 12

Del. quantity cm3/: 50.00...90.00 1000s.: -

3rd speed Shutoff 1/min: 100

electromagnet Volt: 12 Del. quantity cm3/: 50.00...90.00 1000s.: -

# Shutoff electromagnet:

Cut-in

min voltage Rated voltage : 10.0 : 12.0

Mounting and assembly dimensions:

Designation

mm: 3.6...3.8 K KF mm: K-OT MS mm: 1.0...1.4 SVS max. mm: 1.4 mm: 6.0 mm: MIKROSCH. LDA stroke ALDA stroke mm: 6.0 MM mm: 38.8...42.8 mm: 36.2...45.8 FH Ya Yb

Operate control lever after each manifold-pressure compensator pressure change.

Screw out residual-quantity adjusting screw 1 mm after setting pump.

On initial measurement, screw in residual-quantity adjusting screw 1 mm.

<sup>\*</sup> Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : REN Edition : 08.12.92 replaces Calibrating oil : ISO 4113 : VE4/9F2250R484-1 Injection pump Type number : 0 460 494 329 Customer-specific information Customer : RNUR : J8S - 778 US 87 Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil °C return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Opening Pressure bar: 130...133 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length Start of delivery Prestroke mm: -(from BDC): -Injection pump setting values Test specifications in parentheses Timing-device travel Speed 1/min: 1250 Charge press. hPa: 1000 Setting value mm: 3.40...3.80 Setting value Shutoff electromagnet Volt: 12 Supply-pump pressure Speed 1/min: 1250

DO4

Charge press hPa: 1000 Setting value bar: 5.10...5.70 Shutoff electromagnet Volt: 12 Full-load del. with charge press.: 1/min: 1250 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 51.00...52.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (3.0) Full-load del. w/out charge press.: 1/min: 750 Speed Del. quantity cm3/ 1000s.: 38.50...39.50 Shutoff electromagnet Volt: 12 Low-idle speed regulation Speed 1/min: 425 Charge press hPa: -Del. quantity cm3/ 1000s.: 4.50...8.50 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000S.: (2.5) Residual-Delivery Setting 1/min: 500 Speed Charge press. hPa: -Del. quantity cm3/ 1000s.: 3.5...7.5 Shutoff electromagnet Volt: 12 Full-load speed regulation Speed 1/min: 2500 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 7.50...13.50 Shutoff electromagnet Volt: 12 Start: 1/min: 100 Speed Charge press hPa: -Del. quantity cm3/: -mind 1000s.: 50.0

Shutoff electromagnet Volt: 12	Charge press. hPa: 1000 Supply-pump	
Load-dependent start of delivery: Injqty.dif.measurement:	pressure bar: 4.405.00 Shutoff electromagnet Volt: 12	
Speed 1/min: 1250 Charge press hPa: -	Overlow quantity at overflow val	ve:
Injqty. cm3/ difference 1000s.: - 4.506.50 # Shutoff	1st speed 1/min: 750 Charge press. hPa: 1000 Shutoff	
electromagnet Volt: 12 SP press.—dif.measurement pompa di mandata (FP)	<ul><li>electromagnet Volt: 12</li><li>Overflow : 41.683.3</li><li>quantity cm3/10s: (26.698.3</li></ul>	<b>(</b> )
1. Speed 1/min: 1250 Charge press hPa: - Supply pump	+ 2nd speed 1/min: 2115 Charge press. hPa: 1000 - Shutoff	
pressure difference bar: - 0.10.3 # Shutoff	<ul><li>electromagnet Volt: 12</li><li>Overflow : 55.5138.8</li><li>quantity cm3/10s: (40.5153.</li></ul>	8)
Inspection pump test specifications	Delivery-quant. and breakaway ch	ar.:
Test specifications in parentheses Timing-device characteristic:	+ 1nd speed 1/min: 750* + Charge-air pressure-setting	
1st speed 1/min: 2125 Charge press hPa: 1000	point hPa: 300 LDA-stroke nm: 6.0 Shutoff	
TD travel mm: 6.907.70 mm: (6.707.90)	<pre>electromagnet Volt: 12 Del. quantity cm3/: 45.5046.5</pre>	0_,
electromagnet Volt: 12 2nd speed   1/min: 1250 Charge press   hPa: 1000 TD travel   mm: 3.403.80	† 1000s.: (43.0049. † 2nd speed 1/min: 2700 † Charge press. hPa: 1000 † Shutoff	(()()
mm: (3.104.10) Shutoff electromagnet Volt: 12	electromagnet Volt: 12 Del. quantity cm3/: 0.003.00 1000s.: -	
3rd speed 1/min: 1000 Charge press hPa: 1000 TD travel mm: 2.102.90	- 3rd speed 1/min: 2500 - Charge press. hPa: 1000 - Shutoff	
mm: (1.903.10) Shutoff electromagnet Volt: '2	electromagnet Volt: 12  Del. quantity cm3/: 7.5013.50  10008:: (6.5014.5)	n)
Supply-pump pressure characteristic:	+ 4th speed 1/min: 2350 - Charge press. hPa: 1000 - Shutoff	<b>.</b> ,
1st speed 1/min: 2125 Charge press. hPa: 1000 Supply-pump	electromagnet Volt: 12  Del. quantity cm3/: 28.4036.44  1000s.: (27.4037.	0 40)
pressure bar: 7.508.10 Shutoff electromagnet Volt: 12	5th speed 1/min: 2125 Charge press. hPa: 1000 Shutoff	107
2nd speed 1/min: 1250 Charge press. hPa: 1000 Supply-pump	electromagnet Volt: 12  Del. quantity cm3/: 48.1050.11  1000S.: (46.8051.	0 40)
pressure bar: 5.105.70 Shutoff	+ 6th speed 1/min: 1625 + Charge press. hPa: 1000	<del>-</del> -07
electromagnet Volt: 12 3rd speed    1/min: 1000	+ Shutoff + electromagnet Volt: 12	

7th speed 1/min: Charge press. hPa: Shutoff	(47,6052,20) 1250 -	† † †	1.Rotacao 1/min: 500 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 3.507.50 1000S.: -
electromagnet Volt: Del. quantity cm3/: 1000S.: 8th speed 1/min:	36.6039.60 (35.1041.10)	† † †	Load-dependent start of delivery: Injqty.dif.measurement:
Charge press. hPa: Shutoff electromagnet Volt: Del. quantity cm3/:	12 51.0052.00	+ + + +	1st speed 1/min: 1250 Charge press. hPa: - Injqty. cm3/ : - 5.513.5' difference 1000S.: -
9th speed 1/min: Charge press. hPa: Shutoff	1000	+++++++++++++++++++++++++++++++++++++++	Shutoff electromagnet Volt: 12 2nd speed  1/min: 1250 Charge press. hPa: -
electromagnet Volt: Del. quantity cm3/: 1000s.:	50.6053.60 (49.1055.10)	† † †	Inj.—qty. cm3/: MAX.2.08.0" difference 1000S.: —
10th speed 1/min: Charge press. hPa: Shutoff	-	† †	TD-travel dif.measurement: correttore anticipo injezione (SV): 1st speed 1/min: 1250
electromagnet Volt: Del. quantity cm3/: 1000s.:	38.5039.50 (36.0042.00)	<u> </u>	Charge press. hPa: - TD-travel : - 1.21.4 ' difference mm: - Shutoff
Mech. shutoff:		+	electromagnet Volt: 12 2nd speed 1/min: 1250
Electr. shutoff:		Ŧ	Charge press. hPa: -
1st speed 1/min: Charge press. hPa: Del. quantity cm3/:	0.003.00	† † †	TD-travel : - 1.92.7 " difference mm: - Shutoff electromagnet Volt: 12
1000s.: Shutoff electromagnet volt:	_	+++++++++++++++++++++++++++++++++++++++	Part-load del.at 3rd injqty. terza fermo della portata
Damper set qty.:		Ŧ	stop (EGR set) scarico) (ARF)
LFG-setting: solidale con carcass Idle delivery:	5 <b>a</b> :	I	gaz d'échappement-ARF) Spacing mm: 12.0 1st speed 1/min: 825
1st speed 1/min: Shutoff	425	Ī †	Charge press. hPa: 1000 Shutoff
electromagnet Volt: Del. quantity cm3/: 1000s.:	12 4,508,50 (2.5010.50)	I I	electromagnet Volt: 12 Del. quantity cm3/: 25,5026.50 10008.: (23.5028.50)
High Idle:		‡	Automatic starting fuel delivery:
1st speed 1/mi: Shutoff	500	†	1st speed 1/min: 350 Shutoff
electromagnet Volt: Del. quantity cm3/:	12 6.0010.00 (4.0012.00)	I	electromagnet Volt: 12 Del. quantity cm3/: 20.0050.00 10008.: -
Residual:		1	2nd speed 1/min: 250 Shutoff
· · · · · · · · · · · · · · · · · · ·		+	electromagnet Volt: 12

Del. quantity cm3/: 50.00...90.00 1000s.: -

3rd speed 1/min: 100

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 50.00...90.00 1000s.: -

# Shutoff electromagnet:

Cut-in

min voltage : 10.0 : 12.0 Rated voltage

# Mounting and assembly dimensions:

Designation

mm: 3.6...3.8 K KF mm: K-OT MS mm: 1.0...1.4 SVS max. mm: 1.4 LDA stroke mm: 6.0 ALDA stroke mm: MIKROSCH. mm: 6.0 MM FH mm: 38.8...42.8 mm: 36.2...45.8 Ya Yb

## \* Correction at adjusting nut

Operate control lever after each manifold pressure compensator pressure change.

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Screw out residual-quantity adjusting screw 1 mm after setting pump.

On initial measurement, screw in residual—quantity adjusting screw 1 mm.

007

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : REN Edition : 05.03.93 replaces Calibrating oil : ISO-4113 Injection pump : VE4/9F2400R486 : 0 460 494 332 Type number Customer Part-No. : Customer-specific information Customer : RENAULT : G8T - 706 Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating oil return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Opening | bar: 130.00...133.00 Pressure Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 450 x Length Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing-device travel 1/min: 1250 Speed Setting value mm: 3.30...3.70 Shutoff

1/min: 1250 Speed Setting value bar: 5.90...6.50 Shutoff electromagnet Volt: 12 Full-load del. w/out charge press.: 1/min: 1250 Del. quantity cm3/ 1000s.: 38.00...39.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2,5 1000S.: (3.0) Low-idle speed regulation 1/min: 385 Speed Del. quantity cm3/ 1000s.: 10.0...14.0 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000S.: (2.5) Residual-Delivery Setting 1/min: 450 Speed Del. quantity cm3/ 1000S.: 1.00...5.00 Shutoff electromagnet Volt: 12 Full-load speed regulation Speed 1/min: 2600 Del. quantity cm3/ 1000s.: 20.00...26.00 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: 45.00...75.00 mind 1000s.: 45.00 Shutoff electromagnet Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement: 1/min: 1250 Speed Inj.-qty. cm3/ difference 1000s.: - 6.10..8.10 # electromagnet Volt: 12 SP press.—dif.measurement pompa di mandata (FP) 1.Speed 1/min: 1250

electromagnet Volt: 12

Supply-pump pressure

Supply pump pressure difference bar: -0.10.3 # Shutoff electromagnet Volt: 12	† † †	Shutoff electromagnet Volt: Overflow quantity cm3/10s:	55.60139.00
Inspection-pump test specifications Test specifications in parentheses		Delivery-quant. and	breakaway char.
Timing-device characteristic:	+	2nd speed 1/min: Shutoff	2800
2nd speed	+	electromagnet Volt: Del. quantity cm3/: 1000s.:	12 0.005.00 (0.005.00)
mm: (7.008.20) Shutoff	‡	5th speed 1/min: Shutoff	2600
electromagnet Volt: 12 3rd speed  1/min: 1250 TD travel    mm: 3.303.70	+++++++++++++++++++++++++++++++++++++++	electromagnet Volt: Del. quantity cm3/: 1000s.:	20.0026.00 (19.0027.00)
mm: (3.004.00) Shutoff	+	8th speed 1/min: Shutoff	
electromagnet Volt: 12 4th speed   1/min: 1000 TD travel	† † †	electromagnet Volt: Del. quantity cm3/: 1000S.:	30.0038.00 (29.0039.00)
Shutoff	†	9th speed 1/min: Shutoff	
electromagnet Volt: 12 9th speed 1/min: 750 TD travel mm: 1.003.40 mm: (1.003.40)	+	electromagnet Volt: Del. quantity cm3/: 1000S.: 10th speed 1/min:	41.0043.00 (39.7044.30)
KSB/AFB valve Volt: 12	1	Shutoff electromagnet Volt:	
Shutoff electromagnet Volt: 12	1	Del. quantity cm3/:	41.5043.50 (40.2044.80)
Supply-pump pressure characteristic:	+	12th speed 1/min: Shutoff	1250
1st speed 1/min: 1009 Supply-pump	†	electromagnet Volt: Del. quyntity cm3/:	38.0039.00
pressure bar: 4.405.00 Shutoff	Ī	15th speed 1/min: Shutoff	(36.2040.80) 1000
electromagnet Volt: 12 2nd speed 1/min: 1250 Supply-pump	<u>†</u>	electromagnet Volt: Del. quantity cm3/:	12 37.0040.00 (36.2040.80)
pressure bar: 5.906.50 Shutoff	1	20th speed 1/min: Shutoff	
electromagnet Volt: 12 3rd speed   1/min: 2000 Supply-pump	†	<pre>electromagnet Volt: Del. quantity cm3/:</pre>	12 36.1039.10 (35.3039.90)
pressure bar: 7.908.50 Shutoff	‡	Mech. shutoff:	(0)
electromagnet Volt: 12	‡	Electr. shutoff:	
Overlow quantity at overflow valve:	‡	1st speed 1/min:	385
1st speed 1/min: 750 Shutoff	‡	Del. quantity cm3/: 1000S.:	(0.003.00)
electromagnet Volt: 12 Overflow: 41.7083.40 quantity: cm3/10s: (26.7098.40)	‡ ‡	Shutoff electromagnet volt:	_
2nd speed 1/min: 2300	+	Damper set qty.:	

Shutoff LFG-setting: solidale con carcassa: electromagnet Volt: 12 Del. quantity cm3/: 22.50...23.50 1000s.: (20.50...25.50) Idle delivery: 1/min: 385 1st speed Automatic starting fuel delivery: Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.00...14.00 1000S.: (8.00...16.00) 1/min: 200 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...95.00 1000S.: (45.00...95.00) High Idle: 1st speed Shutoff 1/mi: 435 2nd speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 6.50...10.50 1000s.: (4.50...12.50) electromagnet Volt: 12 Del. quantity cm3/: 15.00...45.00 1000S.: (15.00...45.00) Residual: 1/min: 100 4th speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...75.00 1000s.: (45.00...75.00) 1.Rotacao 1/min: 450 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 1.00...5.00 1000s.: (1.00...5.00) Shutoff electromagnet: Load-dependent start of delivery: Cut-in Inj.-qty.dif.measurement: min voltage Rated voltage : 12.0 Mounting and assembly dimensions: Shutoff Designation electromagnet Volt: 12 2nd speed 1/min: 1250 mm: 3.6...3.8 mm: K-OT KF cm3/: MAX. Inj.-qty. MS mm: 0.6...1.0 difference 1000s.: 2.00...8.00 ALDA stroke mm: MIKROSCH. Shutoff mm: 13.6 MM electromagnet Volt: 12 mm: 27.8...31.8 Ya Yb mm: 52.1...61.9 TD-travel dif.measurement: correttore anticipc injectione (SV):
1st speed 1/min: 1250
TD-travel :- 0.70..0.90" Remarks: difference Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 TD-travel : - 1.0...1.4 ' difference Part-load del.at 3rd inj.-qty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0 1st speed 1/min: 1250 D10

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BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 05.03.93 replaces Calibrating oil : ISO-4113 Injection pump : VE4/9F2400R486-1 : 0 460 494 333 Type number Customer Part-No. : Customer-specific information Customer : RENAULT Engine : G8T - 706 CA TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle-holder : 1 688 901 022 assembly Openina Pressure bar: 130.00...133.00 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 450 Start of delivery Prestroke mm: -(from BDC): -Injection pump setting values Test specifications in parentheses Timing-device travel Speed 1/min: 1250 Setting value mm: 3.30...3.70 Shutoff electromagnet Volt: 12

Speed 1/min: 1250 Setting value bar: 5.90...6.50 Shutoff electromagnet Volt: 12 Full-load del. w/out charge press.: 1/min: 1250 Del. quantity cm3/ 1000s.: 38.00...39.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (3.0) Low-idle speed regulation 1/min: 385 Del. quantity cm3/ 1000S.: 10.0...14.0 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000S.: (3.0) Residual-Delivery Setting Speed 1/min: 450 Del. quantity cm3/ 1000s.: 1.00...5.00 Shutoff electromagnet Volt: 12 Full-load speed regulation 1/min: 2600 Speed Del. quantity cm3/ 1000s.: 20.00...26.00 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100 Del. quantity cm3/: 45.00...75.00 mind 1000s.: 45.00 Shutoff electromagnet Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement: Speed 1/min: 1250 Inj.-qty. cm3/ difference 1000S.: -- 6.1...8.1 # Shutoff electromagnet Volt: 12 SP press.—dif.measurement pompa di mandata (FP) 1.Speed 1/min: 1250

Supply-pump pressure

Supply pump	+ Shutoff
pressure	+ electromagnet Volt: 12
difference bar: - 0.10.3 # Shutoff	+ Overflow : 55.60139.00
electromagnet Volt: 12	+ quantity cm3/10s: (40.60154.00)
etectionagnet vott. 12	Todayana and hanka and hanka
Inspection-pump test specifications	Delivery-quant. and breakaway char.
Test specifications in parentheses	${f I}$
TO SPECIFICACIONS IN PURCHENCES	- 2nd speed 1/min: 2800
Timing-device characteristic:	+ Shutoff
ming dovies ondiagest totale.	electromagnet Volt: 12
2nd speed 1/min: 2000	Del. quantity cm3/: 0.005.00
TD travel mm: 7.208.00	19008.: (0.005.00)
mm: (7.008.20)	+ 5th speed 1/min: 2600
Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
3rd speed 1/min: 1250	+ Del. quantity cm3/: 20.0026.00
TD travel mm: 3.303.70	10008.: (19.0027.00)
mm: (3.004.00)	+ 8th speed 1/min: 2500
Shutoff	+ Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
4th speed 1/min: 1000	+ Del. quantity cm3/: 30.0038.00
TD travel mm: 1.602.40	† 1000s.: (29.0039.00)
mm: (1.402.60)	+ 9th speed 1/min: 2300
Shutoff	- Shutoff
electromagnet Volt: 12	+ electromagnet Volt: 12
9th speed 1/min: 750	+ Del. quantity cm3/: 41.0043.00
TD travel mm: 1.003.40	† 1000s.: (39.7044.30)
mm: (1.003.40)	† 10th speed 1/min: 2000
KSB/AFB	+ Shutoff
valve Volt: 12	+ electromagnet Volt: 12
Shutoff	+ Del. quantity cm3/: 41.5043.50
electromagnet Volt: 12	1000\$.: (40.2044.80)
Comply-normal management when the services of the contract of	† 12th speed 1/min: 1250
Supply-pump pressure characteristic:	+ Shutoff
1st speed 1/min: 1000	+ electromagnet Volt: 12
Supply-pump	- Del. quyntity cm3/: 38.0039.00
pressure bar: 4.405.00	10008.: (36.2040.80)
Shutoff	† 15th speed 1/min: 1000
electromagnet Volt: 12	+ Shutoff
2nd speed 1/min: 1250	electromagnet Volt: 12 Del. quantity cm3/: 37.0040.00
Supply-pump	T vet. quantity dib/: 57.0040.00
pressure bar: 5.906.50	1000s.: (36.2040.80) 20th speed 1/min: 750
Shutoff	+ 20th speed 1/min: 750 + Shutoff
electromagnet Volt: 12	electromagnet Volt: 12
3rd speed 1/min: 2000	Del. quantity cm3/: 36.1039.10
Supply-pump	10008.: (35.3039.90)
pressure bar: 7.908.50	10003 (33.3037.70)
Shutoff	<pre># Mech. shutoff:</pre>
electromagnet Volt: 12	Theory. Strategy.
<b>3</b>	<pre>Electr. shutoff:</pre>
Overlow quantity at overflow valve:	1
•	1st speed 1/min: 385
1st speed 1/min: 750	+ Del. quantity cm3/: 0.003.00
Shutoff	10008.: (0.003.00)
electromagnet Volt: 12	+ Shutoff
Overflow : 41.7083.40	+ electromagnet volt: -
quantity cm3/10s: (26.7098.40)	4
2nd speed 1/min: 2300	+ Damper set qty.:

LFG—setting: solidale con carcassa: Idle delivery: 1st speed 1/min: 1250 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 22.50...23.50 1000s.: (20.50...25.50) 1/min: 385 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 10.00...14.00 1000S.: (8.00...16.00) Automatic starting fuel delivery: 1/min: 200 1st speed Shutoff electromagnet Volt: 12 Del. quantity cm3/: 45.00...95.00 1000s.: (45.00...95.00) High Idle: 1st speed Shutoff 1/mi: 435 electromagnet Volt: 12 Del. quantity cm3/: 6.50...10.50 10008:: (4.50...12.50) 2nd speed 1/min: 350 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 15.00...45.00 1000s.: (15.00...45.00) Residual: 1.Rotação 1/min: 450 4th speed 1/min: 100 Shutoff Shutoff electromagnet Volt: 12 Del. quentity cm3/: 1.00...5.00 1000S.: (1.00...5.00) electromagnet Volt: 12 Del. quantity cm3/: 45.00...75.00 1000s.: (45.00...75.00) Load-dependent start of delivery: Shutoff electromagnet: Inj.—qty.dif.measurement: Cut-in 1st speed 1/min: 1250 min voltage Inj.—qty. cm3/ : - 7.4..11.4 " difference 1000s.: -Rated voltage : 12.0 Shutoff Mounting and assembly dimensions: electromagnet Volt: 12 2nd speed 1/min: 1250 Inj.-qty. cm3/: MAX. Designation mm: 3.6...3.8 difference 1000S.: 2,00...8.00 ' ŔF mm: K-OT Shutoff MS mm: 0.6...1.0 electromagnet Volt: 12 ALDA stroke mm: MIKROSCH. mm: 13.6 MM mm: 27.8...31.8 nm: 52.1...61.9 FH TD-travel dif.measurement: Ya correttore anticipo injezione (SV): 1st speed 1/min: 1250 Yio TD-travel difference : - 0.70..0.90" Remarks: mm: -Shutoff electromagnet Volt: 12 2nd speed 1/min: 1250 TD-travel : - 1.0...1.4 ' difference Shutoff electromagnet Volt: 12 Part-load del.at 3rd inj.-qty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0 D13

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet : VWW Edition : 05.03.93 replaces Calibrating oil : ISO-4113 Injection pump : VE4/9F2200R420-2 Type number : 0 460 494 336 Customer Part-No. : Customer-specific information Customer : VW Engine : 028.D-1.9L. UD TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return temp. °C with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder assembly : 1 688 901 000 Opening Pressure bar: 147.00...150.00 Test inj. tubing : 1 680 750 000 Outside diameter : 6.00 x Wall thickness : 2.00 x Length Start of delivery Prestroke mm: -(from BDC): -Injection-pump setting values Test specifications in parentheses Timing device travel 1/min: 1250 mm: 3.70...4.10 Speed Setting value

Speed 1/min: 1250 Setting value bar: 5.50...6.10 Shutoff electromagnet Volt: 12 Full-load del. w/out charge press.: 1/min: 1250 Del. quantity cm3/ 1000S.: 42.00...43.00 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (3.0) Low-idle speed regulation Speed 1/min: 450 Del. quantity cm3/ 1000S.: 9.00...11.00 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 2.0 1000S.: (3.0) Residual-Delivery Setting Speed 1/min: 575 Del. quantity cm3/ 1000S.: 5.50...6.50 Shutoff electromagnet Volt: 12 Full-load speed regulation Speed 1/min: 2525 Del. quantity cm3/ 1000S.: 10.00...14.00 Shutoff electromagnet Volt: 12 Start: Speed 1/min: 100
Del. quantity cm3/: 35.00...65.00
mind 1000S.: 35.00
Shutoff Shutoff electromagnet Volt: 12 Load-dependent start of delivery: Inj.-qty.dif.measurement: Speed 1/min: 1250 Inj.-qty. cm3/ difference 1000S.: - 5.00...7.00 # Shutoff electromagnet Volt: 12 SP press.-dif.measurement pompa di mandata (FP) 1.Speed 1/min: 1250

Shutof?

electromagnet Volt: 12

Supply—pump pressure

Supply pump	<u> </u>
pressure	2nd speed 1/min: 2750
difference bar: - 0.10.3 #	+ Shutoff
Shutoff	<pre>+ electromagnet Volt: 12</pre>
electromagnet Volt: 12	<pre></pre>
Toomanhama mama karak a 1881 a 18	+ 1000s.: (0.006.00)
Inspection pump test specifications	† 5th speed 1/min: 2525
Test specifications in parentheses	+ Shutoff
Timing-device characteristic:	electromagnet Volt: 12
Tilling device character 15th.	+ Del. quantity cm3/: 10.0014.00 + 1000s.: (8.0016.00)
2nd speed 1/min: 2000	8th speed 1/min: 2425
TD travel mm: 6.607.40	+ Shutoff
mm: (6.307.70)	+ electromagnet Volt: 12
Shutoff	Del. quantity cm3/: 19.0029.00
electromagnet Volt: 12_	+ 1000s.: (18.0030.00)
3rd speed 1/min: 1250	† 9th speed 1/min: 2200
TD travel mm: 3.704.10	+ Shutoff
mm: (3.204.60) Shutoff	electromagnet Volt: 12 Del. quantity cm3/: 36.7038.70
electromagnet Volt: 12	1000s.: (35.5039.90)
4th speed 1/min: 750	12th speed 1/min: 1250
TD travel mm: 1.602.40	+ Shutoff
mm: (1.302.70)	+ electromagnet Volt: 12
Shutoff	- Del. quyntity cm3/: 42.0043.00
electromagnet Volt: 12	+ 1000s.: (40.3044.70)
	+ 20th speed 1/min: 750
Supply-pump pressure characteristic:	+ Shutoff
1st speed 1/min. 750	+ electromagnet Volt: 12
1st speed 1/min: 750	Del. quantity cm3/: 33.7036.70
Supply-pump pressure bar: 4.304.90	1000\$:: (32.2038.20)
pressure bar: 4.304.90 Shutoff	+ 21th speed 1/min: 400 + Shutoff
electromagnet Volt: 12	
2nd speed 1/min: 1250	+ electromagnet Volt: 12 + Del. quantity cm3/: 35.5041.50
Supply-pump	+ 1000s.: (33.0044.00)
pressure bar: 5.506.10	+
Shutoff	† Mech. shutoff:
electromagnet Volt: 12	+ _,
3rd speed 1/min: 2200	+ Electr. shutoff:
Supply-pump pressure bar: 7.708.30	1 1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
Shutoff	+ 1st speed 1/min: 450
electromagnet Volt: 12	+ Del. quantity cm3/: 0.003.00 + 1000S.: (0.003.00)
Total Control of the second of	Shutoff
Overlow quantity at overflow valve:	+ electromagnet volt: -
•	+
1st speed 1/min: 750	+ Damper set qty.:
Shutoff	+
electromagnet Volt: 12	+ LFG-setting:
Overflow : 41.7083.40	+ solidale con carcassa:
quantity cm3/10s: (27.8097.30) 2nd speed	† Idle delivery:
Shutoff	1 1st speed 1/50
electromagnet Volt: 12	+ 1st speed 1/min: 450 + Shutoff
Overflow : 55.60139.90	electromagnet Volt: 12
quantity cm3/10s: (41.70154.90)	Del. quantity cm3/: 9.0011.00
	1000s.: (6.0014.00)
Delivery-quant. and breakaway char.:	+
•	+ High Idle:

1st speed 1/mi: 525 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 9.0011.00 1000s.: (6.0014.00)	1st speed 1/min: 1000 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 27.0029.00 1000S.: (25.0031.00)
Residual:	Automatic starting fuel delivery:
1.Rotacao 1/min: 575 Shutoff electromagnet Volt: 12 Dal. quantity cm3/: 5.506.50 1000s.: (4.008.00) 2nd speed 1/min: 525 Shutoff	1st speed 1/min: 180 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0075.00 1000S.: (35.0075.00)
electromagnet Volt: 12 Del. quantity cm3/: 7.309.30 10005.: (5.8010.80)	Shutoff electromagnet Volt: 12 bei. quantity cm3/: 30.0050.00 1000s.: (30.0050.00)
Load-dependent start of delivery: Injqty.dif.measurement:	+ 4th speed 1/min: 100
1st speed  1/min: 1250 Injqty. cm3/ : - 4.010.0" difference 1000S.: - (3.011.0) Shutoff	Shutoff electromagnet Volt: 12 Del. quantity cm3/: 35.0065.00 1000S.: (35.0065.00)
electromagnet Volt: 12 2nd speed 1/min: 1250	Shutoff electromagnet:
Inj.—qty. cm3/: MAX. difference 10COS.: 0.003.00' Shutoff electromagnet Volt: 12	Cut-in min voltage : 10.0 Rated voltage : 12.0
TD-travel dif.measurement: correttore anticipo iniezione (SV): 1st speed  1/min: 1250 TD-travel	Mounting and assembly dimensions:  Designation  KF mm: 3.23.4  MS mm: 5.15.5  MS mm: 1.11.5  Ya mm: 37.641.6  Yb mm: 50.462.3  Remarks:
SP pressdif.measurement: pompa di mandata (FP): 1st speed  1/min: 1250 Supply pump- pressure : - 1.11.50 difference bar: - Shutoff electromagnet Volt: 12	Following pump adjustment, screw out residual-quantity adjusting screw 2 mm.  On initial measurement, screw in residual-quantity adjusting screw 2 mm.
Part-load del.at 3rd injqty. terza fermo della portata stop (EGR set) scarico) (ARF) gaz d'échappement-ARF) Spacing mm: 12.0	T
D16	

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5- 3- 6- 2- 4 Note remarks Test sheet : CUM 26.02.93 Edition : 01.93 Replaces : ISO-4113 Test oil Phasing : 0-60-120-180-240-300 Combination no. : 0 400 866 179 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A100D320/3RS2691 Time to cyl. no. : 1 : 9 410 230 025 EP type number Governor BASIC SETTING Governor design. : RSV550...1100A0C2238 1st speed rpm: 1100 Governer no. : 0 420 233 296 Rack travel in mm : 12.70...12.80 Customer-spec. information Customer Del.quantity cm3/: 12.3...12.5 : C.D.C. Engine : 6CTA-830 100 s: (12.1...12.7) 1st version kW : 157.0 cm3 : 0.4Spread Rated speed : 2200 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 550.0Rack travel in mm: 5.6...5.8

Del.quantity cm3/: 1.6...2.0

100 s: (1.3...2.2)

Spread cm3: 0.6 Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 assembly : 1 688 901 101 Speed rpm: 800 Rack travel in mm: 0.30...0.70 Opening : 207...210 pressure, bar Governor spring pre-tension Click setting x : 3.00 Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 014 rpm : 1100 Speed Aneroid pressure h: 900 Del. quantity : 123.0...127.0) Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 cm3 : 4.00 Spread 1000 : (6.50) (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. RATED SPEED per values 1st version Control lever BEGINNING OF DELIVERY position degrees: 43...51 Test pressure, bar: 27...29

D17

Testing: 1st rack travel in: 11.70 Speed rpm : 1165...1175 2nd rack travel in: 4.00 Speed rpm : 1225...1235 3rd rack travel in: 4.00 rpm : 1225...1255 Speed 4th rack travel in: 1400 : 0.30...1.40 Speed rpm LOW IDLE 1 Control lever position degrees: 25...33 Setting point w/out bumper spring Speed rpm : 550 Rack travel in mm : 5.2 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 550 Rack travel in mm : 5.60...5.80 Aneroid/Altitude Compensator Test 1st version Setting rpm : 500 hPa : 900 mm : 12.70...12.80 Speed rom Pressure Rack travel mm Measurement 1/min : 500Speed 1st pressure hPa : -Rack travel in m: 10.80...11.00 2nd pressure hPa : 340 Rack travel in m: 11.20...11.30 3rd pressure hPa : 465 Rack travel in m: 12.00...12.40 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/: 82.5...84.5 1000 s: (80.5...85.5) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 11.70 Speed rpm : 1165...1175 Speed

D18

### STARTING FUEL DELIVERY

#### LOW IDLE

Speed rpm : 550
Rack travel in mm : 5.60...5.80
Del.quantity cm3/: 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3 : 6.00
1000 s: (8.00)

### Remarks:

: C.D.C. # 3923479

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS : 2.95...3.05 : (2.90...3.10) Prestroke mm Note remarks Rack travel in mm : 10.50 : DEE 7,6 w 1 : 26.02.93 : 02.91 Test sheet Firing order : 1- 5-3- 6- 2- 4 Edition Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 876 350 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A100D410RS2754 Time to cyl. no. : 1 EP type number : 0 410 806 002 Governor BASIC SETTING Governor design. : RSV425...1100A2C2234 1st speed rpm: 1100 : 0 420 232 498 Governer no. Rack travel in mm : 10.60...10.70 Customer-spec. information Customer : JOHN DEERE Del.quantity cm3/: 10.0...10.2 Engine : 6076TRW04 100 s: (9.6...10.2) 1st version kW : 122.0 Spread cm3 : 0.4: 2200 Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS rpm : 425.0 2nd speed Rack travel in mm : 5.8...6.0 Del.quantity cm3/ : 2.6...3.0 Test oil inlet temp. °C : 38...42 100 s: (2.4...3.2) Overflow valve cm3 : 0.6 100 s: (0.8) Spread : 1 457 413 010 Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 assembly : 1 688 901 101 rpm : 800 Speed Rack travel in mm : 0.30...0.70 **Opening** pressure, bar : 207...210 Governor spring pre-tension Click setting x :? Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 008 Speed Del.quantity 1000 Speed rpm : 1100 : 100.5...102.5 Outside diameter : (96.5...102.5) x Wall thickness x Length mm cm3 : 4.00 Spread 1000 : 6.00x2.00x600 : (6.50) (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 41...49 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

D19

1st rack travel in: 9.60 Speed rpm : 1145...1155 2nd rack travel in: 4.00 : 1200...1210 Speed rpm 3rd rack travel in: 4.00 rpm : 1200...1230 Speed 4th rack travel in: 1300 rpm : 0.30...1.40 Speed

LOW IDLE 1 Control lever position degrees: 17...25 Setting point w/out bumper spring Speed rpm : 425 Rack travel in mm : 5.4

Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 425 Rack travel in mm : 5.80...6.00

TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 10.60...10.70 2nd speed rpm : 700 Rack travel in m: 11.80...12.20

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm Del.quantity cm3/: 125.0...128.0 1000 s: (122.5...130.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 9.60 Speed rpm : 1145...1155 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 26.0...30.0
1000 s: (24.0...32.0)

cm3 : 6.00 1000 s: (8.00) Spread

Remarks:

: JOHN DEERE # RE29182 Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

Starting/full-load transition speed from holding magnet = 450 1/min.

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks

: DEE 7,6 w 2 : 26.02.93 : 02.91 Test sheet Edition Replaces Test oil : ISO-4113

Combination no. : 0 400 876 351

Injection pump

Pump designation : PES6A100D410RS2754 EP type number : 0 410 806 002

Governor

Governor design. : RSV425...1100A2C2234

: 0 420 232 499 Governer no.

Customer-spec. information Customer : JOHN DEERE

: 6076 TRW01 Engine

1st version : 106.0 kW Rated speed : 2200

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 010

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 101 assembly

**Opening** 

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05 : (2.90...3.10)
Rack travel in mm : 10.50

Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1100

Rack travel in mm : 9.70...9.80

Del.quantity cm3/: 8.9...9.1

100 s: (8.5...9.1)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0 Rack travel in mm : 5.9...6.1 Del.quantity cm3/ : 2.6...3.0

100 s: (2.4...3.2) cm3 : 0.6Spread

100 s: (0.8)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3 rpm : 800 Speed

Rack travel in mm : 0.30...0.70

Governor spring pre-tension Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

: 89.0...91.0 : (85.0...91.0) Del.quantity 1000

: 4.00 Spread cm3 1000 : (6.50)

RATED SPEED

1st version Control lever

position degrees: 42...50

Testing:

1st rack travel in: 8.70 Speed rpm : 1145...1155 2nd rack travel in: 4.00 : 1200...1210 Speed rpm 3rd rack travel in: 4.00 Speed rpm : 1200...1230 4th rack travel in: 1300 rpm : 0.30...1.40 Speed LOW IDLE 1 Control Lever position degrees: 16...24 Setting point w/out bumper spring Speed rpm : 425 Rack travel in mm : 5.5 Testing: speed rpm : 100 Minimum rack trave: 19.00 Speed Speed rpm : 425 Rack travel in mm : 5.90...6.10 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 9.70...9.80 2nd speed rpm : 700 Rack travel in m: 10.70...10.90 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 700 Del.quantity cm3/ : 110.5...113.5 1000 s: (108.0...116.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 8.70 speed rpm : 1145...1155 Speed STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0) LOW IDLE Speed : 425 rpm Rack travel in mm : 5.90...6.10 Del.quantity cm3/ : 26.0...30.0 1000 s: (24.0...32.0)

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: JOHN DEERE # RE29303 Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

**APPLICATION** 

Tractor (tractor ingines)

022

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : DEE 7,6 w 4 : 26.02.93 : 02.91 Test sheet Edition Firing order Replaces : ISO-4113 Test oil Phasing Combination no. : 0 400 876 354 Tolerance + - ° Injection pump Pump designation : PES6A100D410RS2754 EP type number : 0 410 806 002 Governor BASIC SETTING Governor design. : RSV425...1100A2C2235 1st speed : 0 420 232 511 Governer no. Customer—spec. information Customer : JOHN DEERE Engine : 6076TRW06 1st version kW : 98.0 Spread Rated speed : 2200 TEST BENCH REQUIREMENTS 2nd speed Test oil inlet temp. °C : 38...42 Overflow valve Spread : 1 457 413 010 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Speed Opening pressure, bar : 207...210 Orifice plate 1st version diameter mm : 0,6 Speed Del.quantity Test lines : 1 680 750 008 Spread Outside diameter x Wall thickness x Length mm RATED SPEED : 6.00x2.00x600 1st version (A) Injection pump setting values Control lever Insp. values in parentheses Set equal delivery quant. Testing: per values BEGINNING OF DELIVERY

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 10.50 : 1-5-3-6-2-4 : 0-60-120-180-240-300 : 0.50 (0.75) Time to cyl. no. : 1 rpm: 1100 Rack travel in mm : 9.00...9.10 Del.quantity cm3/: 8.3...8.5 100 s: (7.9...8.5) cm3 : 0.4100 s: (0.6) rpm : 425.0 Rack travel in mm: 5.7...5.9 Del.quantity cm3/: 2.6...3.0 100 s: (2.4...3.2) : 0.6 cm3 100 s: (0.8) GUIDE SLEEVE POSITION Control-Lever position Degree: -3 rpm : 800 Rack travel in mm : 0.30...0.70 FULL LOAD DELIV. AT FULL LOAD STOP : 1100 rom : 83.5...85.5 : (79.5...85.5) 1000 : 4.00 cm3 1000 : (6.50) position degrees: 41...49 1st rack travel in: 8.00 rpm : 1145...1155 Speed 2nd rack travel in: 4.00

Test pressure, bar: 27...29

: 1200...1210 Speed rpm

3rd rack travel in: 4.00 Speed rpm: 1200...1230 4th rack travel in: 1300

: 0.30...1.40 Speed rpm

LOW IDLE 1 Control lever

position degrees: 18...26 Setting point w/out bumper spring

Speed rpm : 425 Rack travel in mm : 5.3

Testina:

Speed rpm : 100 Minimum rack trave: 19.00

Speed rpm : 425 Rack travel in mm : 5.70...5.90

TORQUE CONTROL

Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 9.00...9.10 2nd speed rpm : 650 Rack travel in m: 9.50...9.70

FUEL DELIVERY CHARACTERISTICS

1st version

: 650 Speed rpm

Del.quantity cm3/: 103.0...106.0 1000 s: (100.5...108.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 8.00 Speed rpm : 1145...1155

Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.70...5.90
Del.quantity cm3/ : 26.0...30.0
1000 s: (24.0...32.0)
Spread cm3 : 6.00
1000 s: (2.00)

1000 s: (8.00)

Remarks:

D24

: JOHN DEERE # RE36069

Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

Starting/full-load transition speed from holding magnet = 450 1/min.

Adjustment without torque-control spring retainer with 0.5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 10.50 Note remarks Test sheet DEE Firing order : 1-5-3-6-2-4 : 26.02.93 : 05.92 Edition Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 876 381 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A100D410RS2762-1 Time to cyl. no. EP type number : 0 410 806 008 Governor BASIC SETTING Governor design. : RSV425...1050A0C2252 1st speed rpm : 1050: 0 420 232 571 Governer no. Rack travel in mm : 11.30...11.40 Customer-spec. information Customer : JOHN DEERE Del.quantity cm3/: 10.9...11.1 Engine : 6076TRW-30 100 s: (10.5...11.1) 1st version kW : 131.5 Spread cm3 : 0.4: 2100 Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 425.0 Rack travel in mm : 5.5...5.7 Del.quantity cm3/ : 2.1...2.5 100 s: (1.9...2.7) Test oil inlet temp. °C : 38...42 Overflow valve cm3 : 0.6Spread : 1 457 413 010 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 101 assembly rpm : 800 Speed Rack travel in mm : 0.30...0.70 Opening 1997 : 207...210 pressure, bar Governor spring pre-tension Click setting x : 5.00 Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 008 1050 Speed rpm : , i 109.0...111.0 1000 : (105.0...111.0) Del.quantity Outside diameter x Wall thickness : 4.00 Spread cm3 x Length mm : 6.00X2.00X600 1000 : (6.50) (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 42...50 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

025

1st rack travel in: 10.30 Speed rpm : 1095...1105 2nd rack travel in: 4.00 rpm : 1165...1175 Speed 3rd rack travel in: 4.00 Speed rpm: 1155...1185 4th rack travel in: 1300 Speed rpm: 0.30...1.40

LOW IDLE 1 Control lever position degrees: 20...28 Setting point w/out bumper spring Speed rpm : 425 Rack travel in mm : 5.1

Testing: Speed rom : 190 Minimum rack trave: 19.00 Speed rpm : 425 Rack travel in mm : 5.50...5.70

TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1050 Rack travel in m: 11.30...11.40 2nd speed rpm : 750 Rack travel in m: 13.10...13.30

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750
Del.quantity cm3/ : 134.5...138.5
1000 s: (132.5...140.5)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 10.30 Speed rpm : 1095...1105

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425 Rack travel in mm : 5.50...5.70 Del.quantity cm3/ : 21.5...25.5 1000 s: (19.5...27.5)

cm3 : 6.00 1000 s: (8.00) Spread

Remarks:

: JOHN DEERE # RE41833 Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

Adjustment without torque-control spring retainer with 0.5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : DEE 7,7 d 7 : 26.02.93 : 03.92 Test sheet Edition Replaces Test oil : ISO-4113 Combination no. : 0 400 876 391 Injection pump Pump designation : PES6A100D410RS2762-1 EP type number : 0 410 806 008 Governor Governor design. : RSV425...1100A2C2225 : 0 420 232 566 Governer no. Customer-spec. information Customer : JOHN DEERE Engine : 6076ARW-09 1st version kw : 145.0 : 2200 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 457 413 010 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Openina : 207...210 pressure, bar Orifice plate diameter mm : 0,6 Test Lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

: 2.95...3.05 : (2.90...3.10) : 10.50 Rack travel in mm : Firing order : 1-5-3-6-2-4 : 0-60-120-180-240-300 Phasing Tolerance + - ° : 0.50 (0.75)Time to cyl. no. BASIC SETTING rpm: 1100 1st speed Rack travel in mm : 11.90...12.00 Del.guantity cm3/: 11.4,...11.6 100 s: (11.0...11.6) cm3 : 0.4Spread 100 s: (0.6) rpm : 425.02nd speed Rack travel in mm: 5.7...5.9

Del.quantity cm3/: 2.6...3.0

100 s: (2.4...3.2)

Spread cm3: 0.6

100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : 3.00FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1100 Speed Aneroid pressure h: 900 Del quantity : 774.0...116.0) cm3 : 4.00 1000 : (6.50) Spread RATED SPEED 1st version Control lever position degrees: 39...47

Prestroke mm

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Testing: 1st rack travel in: 10.90 : 1140...1150 Speed rpm 2nd rack travel in: 4.00 Speed : 1205...1215 rpm 3rd rack travel in: 4.00 Speed rpm : 1195...1225 4th rack travel in: 1300 : 0.30...1.40 Speed rpm LOW IDLE 1 Control lever position degrees: 15...23 Setting point w/out bumper spring Speed rpm : 425 Rack travel in mm : 5.3 Testing: Speed rpm Minimum rack trave: 19.00 Speed rpm Rack travel in mm : 5.70...5.90 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 11.90...12.00 2nd speed rpm : 750 Rack travel in m: 13.90...14.10 Aneroid/Altitude Compensator Test 1st version Setting : 500 : 900 : 13.90...14.10 Speed rpm Pressure hPa Rack travel mm Measurement  $1/\min : 500$ Speed 1st pressure hPa Rack travel in m: 11.70...11.90 2nd pressure hPa : 535 Rack travel in m: 12.30...12.40 3rd pressure hPa : 720 Rack travel in m: 13.40...13.80 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 900 Speed rpm : 750 Del.quantity cm3/ : 143.5...147.5 1000 s: (141.5...149.5) Aneroid pressure h: : 500 Speed ngn

Del.quantity cm3/: 129.0...133.0 1000 s: (127.0...135.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 10.90 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425
Rack travel in mm : 5.70...5.90
Del.quantity cm3/ : 26.0...30.0
1000 s: (24.0...32.0)
Spread cm3 : 6.00

1000 s: (8.00)

Remarks:

: JOHN DEERE # RE47502

Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Starting/full-lead transition speed from holding magnet = 450 1/mir.

**APPLICATION** 

Tractor (tractor engines)

D28

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : DEE 7,6 w 6 : 26.02.93 : 05.92 Test sheet Edition Replaces Test oil : ISO-4113 Combination no. : 0 400 876 394 Injection pump Purp designation : PES6A100D410RS2754 EP type number : 0 410 806 002 Governor Governor design. : RSV425...1100A0C2234 -2L : 0 420 232 569 Governer no. Customer-spec. information Customer : JOHN DEERE Engine : 6076TRW04 1st version kW : 122.0 Rated speed : 2200 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 457 413 010 Inlet press., bar: 1.50 Test nozzle holder assembly : 1 688 901 101 **Opening** pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

: 2.95...3.05 : (2.90...3.10) Prestroke mm Rack travel in mm: 10.50 : 1-5-3-6-2-4 Firing order Phasing : 0-60-120-180-240-300 Tolerance + - " : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1100 Rack travel in mm : 10.60...10.70 Del.quantity cm3/: 10.0...10.2 100 s: (9.6...10.2) cm3 : 0.4Spread 100 s: (0.6) 2nd speed rpm : 425.0 Rack travel in mm: 5.5...5.7

Del.quantity cm3/: 2.6...3.0

100 s: (2.4...3.2)

Spread cm3: 0.6

100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 Speed rpm : 800 Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : ? FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1100 Speed Deliquantity : 100.5...102.5) cm3 : 4.00 1000 : (6.50) Spread RATED SPEED 1st version Control lever position degrees: 41...49 Testing:

E01

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 9.60
Speed rpm: 1145...1155
2nd rack travel in: 4.00
Speed rpm: 1200...1210
3rd rack travel in: 4.00
Speed rpm: 1190...1220
4th rack travel in: 1300
Speed rpm: 0.30...1.40

LOW IDLE 1
Control lever

position degrees: 17...25
Setting point w/out bumper spring
Speed rom : 425
Rack travel in mm : 5.1

Testing: Speed rpm : 100 Minimum rack trave: 19.00

Speed rpm : 425 Rack travel in mm : 5.50...5.70

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.60...10.70
2nd speed rpm : 700
Rack travel in m: 11.80...12.20

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 700 Del.quantity cm3/: 125.0...128.0 1000 s: (122.5...130.5)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 9.60 Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425 Rack travel in mm : 5.50...5.70 Del.quantity cm3/ : 26.0...30.0 1000 s: (24.0...32.0) Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: JOHN DEERE # RE51026 Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition : 08.03.93 : 09.92 Replaces Test oil : ISO-4113 Combination no. : 0 400 876 396 Injection pump Pump designation : PES6A95D32ORS2779 EP type number : 0 410 896 903 Governor Governor design. : RSV350...1250A5C2258 : 0 420 233 292 Governer no. Customer-spec. information Customer : NAVISTAR Engine : DT 466 1st version kW : 142.0 Rated speed : 2500 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 2 417 413 038 Inlet press., bar: 2.80 Test nozzle holder assembly : 1 688 901 110 **Opening** : 250...253 pressure, bar Orifice plate diameter mm : 0,5 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values

Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.45...2.55 : (2.40...2.60) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1250 Rack travel in mm : 13.40...13.50 Del.quantity cm3/: 9.7...9.9 100 s: (9.5...10.1) Spread cm3 : 0.3100 s: (0.6) 2nd speed rpm : 350.0 Rack travel in mm : 5.6...5.8 Del.quantity cm3/ : 1.1...1.5 100 s: (0.9...1.8) cm3 : 0.3 Spread 100 s: (0.5) GUIDE SLEEVE POSITION Control-Lever position Degree: -3 Speed rpm: 800 Rack travel in mm: 0.30...0.70 Governor spring pre-tension Click setting x : 4.50FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm Aneroid pressure h: 900 : 97.0...99.0 Del.quantity 1000 : (95.0...101.0) 3.50 cm3 Spread 1000 : (6.00)RATED SPEED 1st version Control lever position degrees: 54...62

E03

Testing: 1st rack travel in: 12.40 : 1290...1300 rpm Speed 2nd rack travel in: 4.00 Speed rpm : 1355...1365 3rd rack travel in: 4.00 Speed rpm : 1360...1370 4th rack travel in: 1450 Speed rpm : 0.00...1.00

LOW IDLE 1 Control lever position degrees: 19...27 Setting point w/out bumper spring Speed rpm: 350 Rack travel in mm: 5.7

Testing: Speed rpm: 100 Minimum rack trave: 19.00 Speed rpm: 350 Rack travel in mm : 5.60...5.80

CONSTANT REGULATION rom : 350...500 Speed

Aneroid/Altitude Compensator Test

1st version Setting Speed : 500 rpm hPa : 900 Pressure

: 13.40...13.50 Rack travel mm

Measurement Speed  $1/\min : 500$ 

1st pressure hPa : -Rack travel in m: 9.40...9.60

2nd pressure hPa : 250

Rack travel in m: 10.50...10.60

3rd pressure hPa : 465 Rack travel in m: 12,10...12.50

FUEL DELIVERY CHARACTERISTICS

1st version Aneroid pressure h: -Speed rpm : 500
Del.quantity cm3/: 66.0...70.0
1000 s: (64.0...72.0)

**BREAKAWAY** 

1st version

E04

1mm rack travel less than

full load rack tr: 12.40 : 1290...1300 rpm

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/: 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 20.00...21.00 100

LOW IDLE

rpm : 350 Speed Rack travel in mm: 5.60...5.80
Del.quantity cm3/: 11.5...15.5
1000 s: (9.0...18.0)
Spread cm3: 3.50
1000 s: (5.50)

Remarks: : NAVISTAR #1818556c91 Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark is at start of delivery of cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition DEE : 26.02.93 : 07.92 Replaces Test oil : ISO-4113 Combination no. : 0 400 876 398 Injection pump Pump designation : PES6A100D410RS2754 EP type number : 0 410 806 002 Governor Governor design. : RSV425...1100A0c2235 -2L : 0 420 232 576 Governer no. Customer-spec. information Customer : JOHN DEERE Engine : 6076TRW06 : 98.0 1st version kW Rated speed : 2200 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 457 413 010 Inlet press., bar: 1.50 Test nozzle holder assembly : 1 688 901 101 Opening pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1100 Rack travel in mm : 9.00...9.10 Del.quantity cm3/: 8.3...8.5 100 s: (7.9...8.5) Spread cm3 : 0.4100 s: (0.6) rpm : 425.0 2nd speed Rack travel in mm : 5.5...5.7 Del.quantity cm3/ : 2.6...3.0 100 s: (2.3...3.2) cm3 Spread : 0.6 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : 5.00 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed : 1100 rpm : 83.5...85.5 : (79.5...85.5) Del.quantity 1000 : 4.00 Spread cm3 1000 : (6.50) RATED SPEED 1st version Control lever position degrees: 48...56 Testing:

E05

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 8.00 Speed rpm: 1145...1155 2nd rack travel in: 4.00 Speed rpm: 1200...1210 3rd rack travel in: 4.00 Speed rpm: 1200...1230 4th rack travel in: 1300 Speed rpm: 0.30...1.40

LOW IDLE 1 Control lever position degrees: 23...31 Setting point w/out bumper spring Speed rpm : 425 Rack travel in mm : 5.1

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 425
Rack travel in mm : 5.50...5.70

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.00...9.10
2nd speed rpm : 650
Rack travel in m: 9.80...10.00

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 650 Del.quantity cm3/ : 103.0...107.0 1000 s: (101.0...109.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 8.00 Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 425 Rack travel in mm : 5.50...5.70 Del.quantity cm3/ : 26.0...30.0 1000 s: (23.5...32.5) Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: JOHN DEERE # RE51909 Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

**APPLICATION** 

Tractor (tractor engines)

E06

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition DEE 26.02.93 07.92 Replaces : ISO-4113 Test oil Combination no. : 0 400 876 399 Injection pump Pump designation : PES6A100D410RS2754 EP type number : 0 410 806 002 Governor Governor design. : RSV425...1100A0c2234 Governer no. : 0 420 232 577 Customer-spec. information Customer : JOHN DEERE Engine : 6076TRW01 1st version kW : 106.0 : 2200 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 457 413 010 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Openina : 207...210 pressure, bar Orifice plate diameter mm : 0,6 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 : 1-5-3-6-2-4 Firing order Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1100 Rack travel in mm : 9.70...9.80 Del.quantity cm3/: 8.9...9.1 100 s: (8.5...9.1) Eserga cm3 : 0.4100 s: (0.6) rpm : 425.0 2nd speed Rack travel in mm : 5.7...5.9 Del.quantity cm3/ : 2.6...3.0 100 s: (2.3...3.2) cm3 : 0.6 100 s: (0.8) Spread GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Rack travel in mm: 0.30...0.70 Governor spring pre-tension Click setting x : 4.00 FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1100 Speed Del.quantity 1000 : (85.0...91.0) cm3 : 4.00 1000 : (6.50) Spread RATED SPEED 1st version Control lever position degrees: 44...52

Testing:

E07

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 8.70
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1200...1210
3rd rack travel in: 4.00
Speed rpm : 1200...1230
4th rack travel in: 1350
Speed rpm : 0.30 1.00 rpm : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 20...28 Setting point w/out bumper spring Speed rpm : 425 Rack travel in mm : 5.3 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 425 Rack travel in mm : 5.70...5.90 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 9.70...9.80
2nd speed rpm : 700
Rack travel in m: 10.70...10.90 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 700 Del.quantity cm3/: 110.5...114.5 1000 s: (108.5...116.5) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 8.70 Speed rpm : 1145...1155 Speed STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0) LOW IDLE Speed rpm : 425 Rack travel in mm : 5.70...5.90 Del.quantity cm3/ : 26.0...30.0 1000 s: (23.5...32.5)

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: JOHN DEERE # RE51910 Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

**APPLICATION** 

Tractor (tractor engines)

E08

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet : DEE 26.02.93 07.92 Edition Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 876 400 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A1000410RS2762-1 Time to cyl. no. : 1 EP type number : 0 410 806 008 Governor BASIC SETTING : RSV425...1100A0C2225 Governor design. 1st speed rpm: 1100 -61 Governer no. : 0 420 232 578 Rack travel in mm : 11.90...12.00 Customer-spec. information Customer : JOHN DEERE Del.quantity cm3/: 11.4...11.6 Engine : 6076ARW-09 100 s: (11.0...11.6) : 145.0 : 2200 1st version kW cm3 : 0.4Spread Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 425.0 Rack travel in mm : 5.8...6.0 Del.quantity cm3/ : 2.6...3.0 100 s: (2.3...3.2) Test oil inlet temp. °C : 38...42 Overflow valve cm3 : 0.6Spread : 1 457 413 010 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 101 rpm : 800 assembly Speed Rack travel in mm : 0.30...0.70 **Opening** : 207...210 Governor spring pre-tension Click setting x : 3.00 pressure, bar Orifice plate diameter mm FULL LOAD DELIV. AT FULL LOAD STOP : 0,6 1st version Test lines : 1 680 750 008 rpm : 1100 Speed Aneroid pressure h: 900 Outside diameter Del.quantity : 114.0...116.0 1000 : (110.0...116.0) x Wall thickness x Length mm : 6.00x2.00x600 : 4.00 Spread 1000 : (6.50) (A) Injection pump setting values Insp. values in parentheses RATED SPEED Set equal delivery quant. per values 1st version Control lever BEGINNING OF DELIVERY position degrees: 43...51 Test pressure, bar: 27...29

E09

Testing: 1st rack travel in: 10.90 Speed rpm: 1145...1155
2nd rack travel in: 4.00
Speed rpm: 1205...1215
3rd rack travel in: 4.00
Speed rpm: 1195...1225
4th rack travel in: 1300
Speed rpm: 0.70 rom : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 20...28 Setting point w/out bumper spring Speed rpm Rack travel in mm: 5.4 Testing: Speed rpm Minimum rack trave: 19.00 Speed : 425 rpm Rack travel in mm : 5.80...6.00 TORQUE CONTROL Torque control curve — 1st version 1st speed rpm : 1100 Rack travel in m: 11.90...12.00 2nd speed rpm : 750 Rack travel in m: 13.90...14.10 Aneroid/Altitude Compensator Test 1st version Setting : 500 Speed rpm hPa : 900 Pressure : 13.90...14.10 Rack travel mm Measurement 1/min: 500 Speed 1st pressure hPa : Rack travel in m: 11.80...12.00
2nd pressure hPa : 500
Rack travel in m: 12.40...12.50 3rd pressure hPa : 665 Rack travel in m: 13.30...13.70 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 900 Speed rpm : 750 Del.quantity cm3/: 143.5...147.5 1000 s: (141.5...149.5) Aneroid pressure h: -Speed : 500 rpm

E10

Del.quantity cm3/: 129.0...133.0 1000 s: (127.0...135.0) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 10.90 Speed rpm : 1145...1155 Speed STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0) LOW IDLE Speed rpm : 425 Rack travel in mm : 5.80...6.00 Del.quantity cm3/: 26.0...30.0 1000 s: (23.5...32.5) Spread cm3 : 6.00 1000 s: (8.00) Remarks: : JOHN DEERE # RE51911 Start-of-delivery mark = 13,5° after start of delivery cyl. 1. Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

**APPLICATION** 

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS 2.95..:3.05 (2.90...3.10) 9.00...12.00 1-5-3-6-2-4 Prestroke mm Note remarks Rack travel in mm : DEE Test sheet Firing order 26.02.93 07.92 Edition Replaces Test oil : 180-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 876 401 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A100D410RS2762 Time to cyl. no. EP type number : 0 410 806 003 Governor BASIC SETTING : RSV400...1100A0c2204 Governor design. rpm: 11001st speed Governer no. : 0 420 232 579 Rack travel in mm : 11.20...11.30 Customer spec. information Customer : JOHN DEERE Del.quantity cm3/: 10.4...10.6 Engine : 6076TT 100 s: (10.0...10.6) 1st version kW : 124.0 Spread cm3 : 0.4: 2200 Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS rpm : 400.0 2nd speed Rack travel in mm : 6.1...6.3 Del.quantity cm3/ : 3.1...3.5 100 s: (2.8...3.7) Test oil : 38...42 inlet temp. °C Overflow valve cm3 : 0.6 100 s: (0.8) Spread : 1 457 413 010 Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 101 rpm : 800 assembly Speed Rack travel in mm: 0.30...0.70 Opening pressure, bar : 207...210 Governor spring pre-tension Click setting x : 5.00Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 008 rpm : 1100 Speed , : 104.0...106.0 1000 : (100.0...106.0) Del.quantity Outside diameter x Wall thickness Spread cm3 : 4.00 : 6.00x2.00x600 1000 x Length mm : (6.50) (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 47...55 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

1st rack travel in: 10.20 Speed rpm : 1145...1155 2nd rack travel in: 4.00 Speed rpm : 1205...1215
3rd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1350
Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever position degrees: 21...29 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.7

Testing: Speed rpm: 100 Minimum rack trave: 19.00 က္တက : 400 Rack travel in mm : 6.10...6.30

TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100
Rack travel in m: 11.20...11.30
2nd speed rpm : 700 Rack travel in m: 12.50...12.70

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 700 Del.quantity cm3/ : 127.5...131.5 1000 s: (125.5...133.5)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 10.20 Speed rpm : 1145...1155

STARTING FUEL DELIVERY

rom : 100 Del.quantity cm3/: 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 400 Rack travel in mm : 6.10...6.30 Del.quantity cm3/ : 31.0...35.0 1000 s: (28.5...37.5)

cm3 : 6.00 Spread 1000 s: (8.00)

Remarks:

: JOHN DEERE # RE51912 Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition DEE : 26.02.93 : 01.93 Replaces Test oil : ISO-4113 Combination no. : 0 400 876 412 Injection pump Pump designation : PES6A100D410RS2762-1 EP type number : 0 410 806 008 Governor Governor design. : RSV450...1100A0c2252 : 0 420 232 592 Governer no. Customer-spec. information Customer : JOHN DEERE Engine : 6076TDW 30 1st version : 120.0 KW Rated speed 2200 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 457 413 010 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Opening : 207...210 pressure, bar Orifice plate diameter mm : 0,6 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00X2.00X600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 : 1-5-3-6-Firing order Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1100 Rack travel in mm : 10.90...11,00 Del.quantity cm3/: 10.1...10.3 100 s: (9.7...10.3) Spread cm3 : 0.4100 s: (0.6) rpm : 450.02nd speed Rack travel in mm : 5.2...5.4 Del.quantity cm3/ : 1.9...2.3 100 s: (1.6...2.5) : 0.6 Spread cm3 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : 3.00FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1100 : 101.0...103.0 : (97.0...103.0) Del.quantity 1000 : 4.00 Spread cm3 1000 : (6.50) RATED SPEED 1st version Control lever position degrees: 42...50

Testing:

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 9.90
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1200...1210
3rd rack travel in: 4.00
Speed rpm : 1190...1220
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever position degrees: 20...28 Setting point w/out bumper spring Speed rpm : 450 Rack travel in mm : 4.8

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 450
Rack travel in mm : 5.20...5.40

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.90...11.00
2nd speed rpm : 500
Rack travel in m: 12.30...12.50

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 500 Del.quantity cm3/ : 136.5...140.5 1000 s: (134.5...142.5)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 9.90 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

Speed rpm : 450 Rack travel in mm : 5.20...5.40 Del.quantity cm3/ : 19.0...23.0 1000 s: (16.5...25.5) Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: JOHN DEERE # RE54248 Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet : KHD Edition : 26.02.93 : 0-60-120-180-240-300 Phasing Replaces : ISO-4113 Test oil Tolerance + - ° : 0.50 (0.75) Combination no. : 0 400 876 415 BASIC SETTING Injection pump Pump designation : PES6A95D410RS2839 1st speed rpm: 1250 : 0 410 896 894 EP type number Rack travel in mm : 12.50...12.60 Governor Governor design. : RSV325...1250A5C1164 Del.guantity cm3/: 11.6...11.8 : 0 420 232 593 Governer no. 100 s: (11.4...12.0) Customer-spec. information Spread cm3 : 0.3Customer : KHD 100 s: (0.6) Engine : BF6L913C 2nd speed rpm : 325.0
Rack travel in mm : 6.4...6.6
Del.quantity cm3/ : 1.0...1.6
100 s: (0.7...1.8)
Spread cm3 : 0.3 1st version kw : 164.0 Rated speed : 2500 TEST BENCH REQUIREMENTS 100 s: (0.5) Test oil inlet temp. °C : 38...42 GUIDE SLEEVE POSITION Control-lever position Overflow valve Degree: -3 : 1 419 992 198 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Inlet press., bar: 1.50 Governor spring pre-tension Click setting x :? Test nozzle holder : 0 681 343 009 assembly FULL LOAD DELIV. AT FULL LOAD STOP Opening ( pressure, bar : 172...175 1st version Speed rpm : 1250 Aneroid pressure h: 1200 : 116.0...118.0 1000 : (114.0...120.0) cm3 : 3.50 Test lines : 1 680 750 014 Del.quantity Outside diameter Spread x Wall thickness 1000 : (6.00) : 6.00x2.00x600 x Length mm RATED SPEED (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. 1st version Control lever per values position degrees: 92...100 Testing: BEGINNING OF DELIVERY 1st rack travel in: 11.50 Speed rpm : 1290...1300 2nd rack travel in: 4.00 Test pressure, bar: 25...27 : 2.60...2.70 Prestroke mm : (2.55...2.75) : 1315...1345 Speed rpm

3rd rack travel in: 4.00 Speed rpm : 1365...1395 4th rack travel in: 1540 Speed rpm : 0.30...1.40 LOW IDLE 1 Control lever position degrees: 63...71 Setting point w/out bumper spring Speed rpm : 350 Rack travel in mm : 6.0 Testing: Speed rpm : 100 Minimum rack trave: 19.50 rpm : 350 Rack travel in mm: 6.40...6.60
Rack travel in mm: 2.00
Speed rpm: 575...635 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1250 Rack travel in m: 12.50...12.60 rpm : 500 2nd speed Rack travel in m: 12.50...12.70 Aneroid/Altitude Compensator Test 1st version Setting Speed : 500 rpm hPa : 1200 Pressure Rack travel mm : 12.50...12.60 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 10.40...10.50 2nd pressure hPa : 450 Rack travel in m: 11.70...11.80 3rd pressure hPa : 300 Rack travel in m: 11.10...11.30 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rpm : 1150
Del.quantity cm3/ : 116.5...119.5
1000 s: (114.0...122.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 11.50 Speed rpm : 1290...1300

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 120.0...130.0 1000 s: (117.0...133.0) Rack travel in mm : 17.10...17.30

Remarks:

**APPLICATION** 

Combine-harvester

Aneroid pressure h: -

Speed rpm : 500
Del.quantity cm3/: 74.0...76.0
1000 s: (72.0...78.0)

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 10.50 Note remarks Test sheet Edition : DEE : 26.02.93 Firing order : 1-5- 3- 6- 2- 4 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 876 416 : 0.50 (0.75) Tolerance + - ° Injection pump Pump designation : PES6A1000410RS2762-1 Time to cyl. no. : 1 EP type number : 0 410 806 008 Governor BASIC SETTING : RSV400...1100A2C2229 Governor design. rpm: 1100 1st speed : 0 420 232 594 Governer no. Rack travel in mm : 12.00...12.10 Customer-spec. information Customer : JOHN DEERE Del.quantity cm3/: 12.0...12.2 Engine : 6076 TF 030 100 s: (11.8...12.4) 1st version kW 2nd version kW : 142.0 Spread cm3 : 0.4: 2200 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 400.0 Rack travel in mm : 5.0...5.2 Del.quantity cm5/ : 1.9...2.3 100 s: (1.6...2.5) Test oil inlet temp. °C : 38...42 Overflow valve Spread cm3 : 0.6: 1 457 413 010 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 rpm : 800 assembly : 1 688 901 101 Speed Rack travel in mm : 0.30...0.70 Opening : 207...210 Governor spring pre-tension pressure, bar Click setting x :? Orifice plate : 0,6 diameter mm FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 008 rpm : 1100 Speed Del.quantity : 120.0...124.0) Outside diameter x Wall thickness cm3 : 4.00 Spread : 6.00X2.00X600 x Length mm 1000 : (6.50)(A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. per values \_\_\_\_\_ 1st version Control lever position degrees: 40...48 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

E17

1st rack travel in: 11.00 Speed rpm : 1145...1155 2nd rack travel in: 4.00 Speed rpm : 1205...1215 4th rack travel in: 1300 Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever position degrees: 16...24 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 4.6

Testing: Speed rpm : 100 Minimum rack trave: 19.00 rpm : 400 Speed Rack travel in mm : 5.00...5.20 Rack travel in mm : 2.00

rom

TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 12.00...12.10 2nd speed rpm : 700

: 550...610

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 700 Del.quantity cm3/ : 151.0...154.0 1000 s: (148.5...156.5)

**BREAKAWAY** 

Speed

1st version 1mm rack travel less than

full load rack tr: 11.00 rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

: 400 rpm Rack travel in mm : 5.00...5.20 Del.quantity cm3/: 19.0...23.0 1000 s: (16.5...25.5)

cm3 : 6.00 1000 s: (8.00) Spread

Remarks:

: JOHN DEERE # RE4864D Adjustment without torque-control spring retainer with 1 mm Less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark = 13,5° after start of delivery cyl. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet

DEE 08.03.93 Edition

Replaces

Test oil : ISO-4113

: 0 400 876 417 Combination no.

Injection pump

: PES6A100D410RS2762-1 Pump designation

EP type number : 0 410 806 008

Governor

: RSV425...1100A0C2252 Governor design.

-4L

: 0 420 232 595 Governer no.

Customer-spec. information

: JOHN DEERE Customer

: 6076ARW-32 Engine

: 145.0 1st version kW : 2200 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 457 413 010

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 101 assembly

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

E19

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

: 1 Time to cyl. no.

BASIC SETTING

1st speed rpm: 1100

Rack travel in mm : 11.90...12.00

Del.guantity cm3/: 11.4...11.6

100 s: (11.0...11.6)

cm3 : 0.4Spread

100 s: (0.6)

2nd speed rpm : 425.0 Rack travel in mm : 5.8...6.0 Del.quantity cm3/ : 2.6...3.0 100 s: (2.3...3.2)

cm3 : 0.6

Spread 100 s: (0.8)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed rpm: 800 Rack travel in mm: 0.30...0.70

Governor spring pre-tension Click setting x : 3.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

: 1100 Speed rpm

1000 : (110.0...116.0) Del.quantity

: 4.00 Spread cm3

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 43...51

Testing:

1st rack travel in: 10.90 rpm : 1145...1155 Speed 2nd rack travel in: 4.00 Speed rpm : 1205...1215
3rd rack travel in: 4.00
Speed rpm : 1195...1225
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 20...28 Setting point w/out bumper spring

Speed rpm : 425 Rack travel in mm : 5.4

Testing:

Speed rpm: 100 Minimum rack trave: 19.00 Speed rpm: 425

Rack travel in mm : 5.80...6.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1100
Rack travel in m: 11.90...12.00
2nd speed rpm : 750

Rack travel in m: 13.90...14.10

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750 Del.quantity cm3/ : 143.5...147.5 1000 s: (141.5...149.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.90 Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 100.0...120.0 1000 s: (95.0...125.0)

LOW IDLE

rpm : 425 Speed Rack travel in mm : 5.80...6.00 Del.quantity cm3/ : 26.0...30.0 1000 s: (23.5...32.5) Spread

cm3 : 6.00 1000 s: (8.00)

Remarks:

: JOHN DEERE # RE55711 Start-of-delivery mark = 13,5° after

start of delivery cyl. 1.

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

E20

BOSCH INJ. PUMP TEST SPECIFICATIONS : 1- 4- 9- 8- 5- 2-11- 10- 3- 6- 7- 12 Firing order Note remarks Test sheet : KHD Edition : 26.02.93 0-15-60-75-120-135-180-195-240-255-300-Phasing Replaces Test oil : ISO-4113 : 0.50 (0.75) Tolerance + - ° Combination no. : 0 401 840 772 Time to cyl. no. Injection pump Pump designation : PE12P110A920LS3310 EP type number : 0 411 810 714 BASIC SETTING Governor 1st speed rpm: 1150 : RQV300...1150PA1047 : 0 421 814 030 Governor design. Governer no. Rack travel in mm : 9.70...9.80 Customer-spec. information Del.quantity cm3/: 10.8...11.0 Customer 100 s: (10.5...11.3) : F 12L513 Engine Spread cm3 : 0.4: 282.0 1st version kW : 2300 Rated speed 100 s: (0.7) 2nd speed rpm : 300.0 Rack travel in mm : 5.0...5.4 Del.quantity cm3/ : 1.5...2.1 100 s: (1.3...2.3) TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 : 0.4 cm3 Spread Overflow valve 100 s: (0.7) : 1 417 413 025 (B) Setting of injection pump Inlet press., bar: 1.50 with governor Test nozzle holder GUIDE SLEEVE TRAVEL : 0 681 343 009 assembly 1st speed man 1.40...1.90 travel mm **Opening** 2nd speed : 172...175 pressure, bar travel mm 2.20...2.70 3rd speed 500 rpm travel mm 3.70...4.20 Test lines : 1 680 750 015 4th speed 870 rpm : 7.40...7.90 travel mm Outside diameter 5th speed 1210 rpm x Wall thickness : 10.00...10.50 travel mm x Length mm : 6.00x1.50x600 GUIDE SLEEVE POSITION (A) Injection pump setting values Control-lever position Insp. values in parentheses Degree: -1 rpm : 1340 Set equal delivery quant. Speed per values Rack travel in mm : 7.40...10.00 BEGINNING OF DELIVERY FULL LOAD DELIV. AT FULL LOAD STOP Test pressure, bar: 25...27 1st version Prestroke mm : 3.10...3.20 : (3.05...3.25) Rack travel in mm : 9.00...12.00 : 1150 Speeu Del.quantity 1000 Speed rpm

: 108.0...110.0 : (105.0...113.0)

cm3 : 4.00 1000 : (7.50) Spread RATED SPEED 1st version Control lever position degrees: 104...112 Testing: 1st rack travel in: 8.70
Speed rpm : 1190...1200
2nd rack travel in: 4.00
Speed rpm : 1260...1290
4th rack travel in: 1400
Speed rpm : 0.00...1.00 LOW IDLE 1 Control lever position degrees: 71...79 Testing: Speed rpm : 200
Minimum rack trave: 8.20
Speed rpm : 300
Rack travel in mm : 5.10...5.30 CONSTANT REGULATION rpm : 300...380 Speed START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 700 Del.quantity cm3/ : 95.0...99.0 1000 s: (92.0...102.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 8.70 rpm : 1190...1200 Speed STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 135.0...165.0 1000 s: (131.0...169.0) Remarks:

E22

BOSCH INJ. PUMP TEST SPECIFICATIONS Firing order : 1-5-3-6-2-4 Note remarks : SCA 9,0 j : 26.02.93 : 12.92 : 0-60-120-180-240-300 Test sheet Phasing Edition Tolerance + - ° Replaces : 0.50 (0.75) : ISO-4113 Test oil Time to cyl. no. : 1 Combination no. : 0 401 846 849 BASIC SETTING Injection pump Pump designation : PE6P12OA32ORS3196 1st speed rpm : 700: 0 411 826 763 EP type number Rack travel in mm : 10.40...10.50 Governor : RQV200...1100PA729-1 : 0 421 813 470 Governor design. Governer no. Del.quantity cm3/: 13.3...13.5 100 s: (13.0...13.8) Customer—spec. information Customer : SAAB-SCANIA cm3 : 0.5Spread : DS9 06 Engine 100 s: (0.8) TEST BENCH REQUIREMENTS 2nd speed rpm : 225.0 Rack travel in mm : 4.9...5.3 Del.quantity cm3/ : 2.2...2.6 Test oil inlet temp. °C : 38...42 100 s: (-) Overflow valve cm3 : 0.3 Spread : 1 417 413 025 100 s: (0.6) Inlet press., bar: 1.50 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 019 assembly GUIDE SLEEVE TRAVEL 1st speed rpm 0.50...0.90 Opening 1 travel mm pressure, bar : 207...210 2nd speed 350 rpm 2.00...2.60 travel mm 3rd speed Orifice plate 650 : 4.90...5.50 : 1145 : 8.30...8.50 : 1250 diameter mm : 0,8 travel mm 4th speed rpm travel mm : 1 680 750 015 Test lines 5th speed rpm : 9.20...9.60 travel mm Outside diameter x Wall thickness GUIDE SLEEVE POSITION : 6.00x1.50x600 x Length mm Control-lever position Degree: -1 : 1120 (A) Injection pump setting values rpm Insp. values in parentheses Set equal delivery quant. Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP per values BEGINNING OF DELIVERY 1st version Test pressure, bar: 25...27 Speed Del.quantity 1000 Speed rpm 133.0...135.0 : 5.00...5.10 : (4.95...5.15) : (130.0...138.0) Prestroke mm

5.00

: (8.00)

cm3

1000

Spread

Rack travel in mm : 9.00...12.00

## RATED SPEED

1st version Control lever

position degrees: 110...118

Testing:

1st rack travel in: 9.40 Speed rpm: 1140...1150 2nd rack travel in: 4.00 Speed rpm: 1250...1280 4th rack travel in: 1350

riom : 0.00...1.00 Speed

LOW IDLE 1 Control lever

position degrees: 60...68

Testing:

rpm : 100 Speed

Minimum rack trave: 6.20 Speed rpm : 225

Rack travel in mm : 4.90...5.10 Rack travel in mm : 2.00

: 300...360 Speed rpm

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 1100 Del.quantity cm3/ : 145.0...153.0 1000 s: (143.0...155.0)

## BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 9.40 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 225 Rack travel in mm : 4.90...5.10

Remarks:

Speed rpm : 100 Del.quantity cm3/ : 330.0...380.0 1000 s: (-) Rack travel in mm : 20.00...21.00

Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm Start-of-delivery setting with ROBO

diaphragm.

: 5.00...5.10 : (4.95...5.15) : 9.00...12.00 : 1-5-3-6-2-4 BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm Note remarks Rack travel in mm : Firing order Test sheet Edition SCA : 26.02.93 : 11.92 Replaces : ISO-4113 Test oil Phasing : 0-60-120-180-240-300 Combination no. : 0 401 846 956 Tolerance + - ° : 0.50 (0.75) Injection pump Time to cyl. no. : 1 Pump designation : PE6P12OA32ORS3196 : 0 411 826 763 EP type number BASIC SETTING Governor : RQV200...1100PA729-4 : 0 421 813 950 Governor design. 1st speed rpm : 700 Governer no. Rack travel in mm : 10.50...10.60 Customer-spec. information Customer : SCANIA Del.quantity cm3/: 13.2...13.4 : DSC9 10 Engine 100 s: (12.9...13.7) TEST BENCH REQUIREMENTS Spread cm3 : 0.8Test oil 100 s: (1.2) inlet temp. °C : 38...42 2nd speed rpm : 250.0 Rack travel in mm : 4.6...5.0 Del.quantity cm3/ : 1.3...1.9 Overflow valve : 1 417 413 025 100 s: (-) cm3 : 0.4Inlet press., bar: 2.30 Spread 100 s: (0.8) Overflow quantity min. 1/h: 170...0 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 104 assembly GUIDE SLEEVE TRAVEL 250 0.70...1.10 1st speed rpm Opening travel mm 2nd speed pressure, bar : 250...253 rpm 2.00...2.60 travel mm Orifice plate 3rd speed : 650 rpm : 4.90...5.50 : 1145 diameter mm : 0,7 travel mm 4th speed rom : 8.30...8.50 : 1250 travel mm Test Lines : 1 680 750 008 5th speed **LDW** : 9.20...9.60 travel mm Outside diameter x Wall thickness GUIDE SLEEVE POSITION : 6.00X2.00X600 x Length mm Control-lever position Degree: -1 rpm : 1120 (A) Injection pump setting values Speed Insp. values in parentheses Rack travel in mm : 15.20...17.80 Set equal delivery quant. FULL LOAD DELIV. AT FULL LOAD STOP per values BEGINNING OF DELIVERY 1st version rpm : 700 Test pressure, bar: 25...27 Speed Aneroid pressure h: 900

Del.quantity : 132.0...134.0 1000 : (129.0...137.0) Spread cm3 : 8.00 1000 : (12.00) RATED SPEED 1st version Control lever position degrees: 112...120 Testing: 1st rack travel in: 9.50 rpm : 1140...1150 Speed 2nd rack travel in: 4.00 Speed rpm : 1235...1265 4th rack travel in: 1350 Speed rpm : 0.00...1.00 LOW IDLE 1 Control Lever position degrees: 56...66 Testina: Speed rom Minimum rack trave: 5.80 Speed rpm : 250 Minimum rack cross
Speed rpm : 250
Rack travel in mm : 4.60...4.80
Rack travel in mm : 2.00
rpm : 320...380 Aneroid/Altitude Compensator Test 1st version Setting rpm : 500 hPa : 900 Speed rpm Pressure : 10.50...10.60 Rack travel mm Measurement 1/min: 500 1st pressure hPa : -Rack travel in m: 9.80...10.20 2nd pressure hPa : 350 Rack travel in m: 10.30...10.40 3rd pressure hPa : 320 Rack travel in m: 9.90...10.10 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 900 Aneroid pressure n: 700 Speed rpm : 1100 Del.quantity cm3/: 128.0...136.0 1000 s: (126.0...138.0)

Speed rpm : 500 Del.quantity cm3/ : 114.0...118.0 1000 s: (112.0...120.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 9.50 Speed rpm : 1140...1150 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 110.0...130.0 1000 s: (-) Rack travel in mm : 9.80...10.20

LOW IDLE

Speed rpm : 250 Rack travel in mm : 4.60...4.80

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm

Start-of-dalivery setting with ROBO diaphragm.

E26

Aneroid pressure h: -

## BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

: DAF

Test sheet Edition : 05.03.93

Replaces Test oil : ISO-4113

Combination no. : 0 401 876 303z

Injection pump

Pump designation : PE6P100A320RS384-1Z

EP type number : 0 411 806 189

Governor

: RSV250...1100P5A510 : 0 421 833 191 Governor design.

Governer no.

Cust, part no. : 0397803

Customer-spec. information Customer : DAF

Engine : DK 1160 M

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Test rozzle holder

assembly : 0 681 343 009

Opening

pressure, bar : 172...175

Test lines : 1 680 750 015

Outside diameter x Wall thickness

x Length mm : 6.00X1.50X600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.20...3.30 : (3.15...3.35) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-

E27

Phasing : 0-60-120-180-240-300

Tolerance + - \* : 0.50 (0.75)

BASIC SETTING

1st speed rpm: 850

Rack travel in mm : 10.30...10.40

Del.quantity cm3/: 9.0...9.2

100 s: (8.8...9.4)

Spread cm3 : 0.3

100 s: (0.6)

rpm : 250.02nd speed

Rack travel in mm : 7.2...7.4 Del.quantity cm3/ : 1.2...1.6

100 s: (0.9...1.8)

Spread cm3 : 0.3100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position Degree: -3

Speed rpm: 800 Rack travel in mm: 0.30...0.70

Governor spring pre-tension Click setting x : 4.25

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rom : 850

Specu Del.quantity 1000 : 90.0...92.0 : (88.0...94.0) : 3,50

Spread cm3

1000

RATED SPEED

1st version

Control lever

position degrees: 91...99

Testing:

1st rack travel in: 9.30

: 1025...1035 Speed (LOC)

2nd rack travel in: 4.00

Speed : 1075...1105 rpm

3rd rack travel in: 4.00

: 1160...1190 Speed rpm

4th rack travel in: 1300

rpm : 0.30...1.40 Speed LOW IDLE 1 Control Lever position degrees: 67...75
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 6.8 Testing: Speed : 100 rpm Speed rpm : 250
Rack travel in mm : 7.20...7.40
Rack travel in mm : 2.00
Speed rpm : 700...760 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 850 Rack travel in m: 10.30...10.40 2nd speed rpm : 400 Rack travel in m: 10.50...10.60 3rd speed rpm : 300 Rack travel in m: 10.70...11.20 **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 9.30 rpm : 1025...1035 Speed STARTING FUEL DELIVERY LOW IDLE Speed rpm : 250
Rack travel in mm : 7.20...7.40
Del.quantity cm3/ : 12.0...16.0
1000 s: (9.5...18.5)
Spread cm3 : 3.50
1000 s: (5.50) Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition : PEN : 03.12.92 Replaces : ISO-4113 Test oil Combination no. : 0 401 876 726 Injection pump Pump designation : PE6P110A720RS3109 EP type number : 0 411 816 732 Governor Governor design. : RSV200...900P1/421 Governor no. : 0 421 833 132 Customer-spec. information : VOLVO-PENTA Customer Engine : TD 100 G 1st version kW : 203.0 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test lines : 1 680 750 015 Outside diameter x Wall thickness : 6.00x1.50x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 3.50...3.60 : (3.45...3.65) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

```
Phasing
                      : 0-60-120-180-240-300
Tolerance + - °
                     : 0.50 (0.75)
Time to cyl. no. : 1
BASIC SETTING
1st speed
                 rpm: 700
Rack travel in mm : 12.60...12.70
Del.quantity cm3/: 16.6...16.8
                100 s: (16.3...17.1)
                cm3 : 0.4
Spread
                100 s: (0.8)
2nd speed
               rpm : 250
Rack travel in mm : 4.20...4.40
Del.quantity cm3/: 1.7...2.1
100 s: (-)
                cm3 : 0.3
100 s: (0.6)
Spread
GUIDE SLEEVE POSITION
Control-lever position
              Degree: -3
               rpm : 800
Speed
Rack travel in mm : 0.30, ..0.70
Governor spring pre-tension Click setting x :?
FULL LOAD DELIV. AT FULL TOAD STOP
1st version
Speed
               rpm : 700
Del.quantity
                      : 166.0...168.0
              1000 : (163.0...171.0)
                      : 4.00
Spread
               1000 : (8.00)
RATED SPEED
1st version
Control lever
 position degrees: 42...50
Testing:
1st rack travel in: 11.60
Speed rpm : 940...955
2nd rack travel in: 4.00
Speed rpm : 970...1000
4th rack travel in: 1140
```

F01

Speed rpm : 0.30...1.70

LOW IDLE 1
Control lever
position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 250
Rack travel in mm : 3.80
Speed rpm : 250
Rack travel in mm : 4.20...4.40
Rack travel in mm : 2.00
Speed rpm : 270...330

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 11.60 Speed rpm : 940...950 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Rack travel in mm : 20.00...21.00

:

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB 11.01.93 Edition Replaces Test oil : ISO-4113 Combination no. : 9 400 087 423 Injection pump Pump designation : PES5P120A720LS7175 -10 EP type riumber : J 412 725 816 Governor Governor design. : RQ300/1050PA774-4 Governer no. : 0 421 801 453 Customer—spec. information Customer : MERCEDES-BENZ : 0M449 LA Engine : 221.0 1st version kW Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 100...120 Test nozzle holder : 1 688 901 019 assembly Opening pressure, bar : 207...210 Orifice plate diameter mm : 0,8 Test lines : 1 680 750 067 Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000

(A) Injection pump setting values

per values \_

Insp. values in parentheses Set equal delivery quant.

BEGINNING OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 20.00...21.00 Firing order : 1- 3- 5- 4-: 0-72-144-216-288 Phasing Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 5 BASIC SETTING 1st speed rpm: 600 Rack travel in mm : 13.60...13.80 Del.quantity cm3/: 23.5...23.7 100 s: (23.2...24.9) Spread cm3 : 0.5100 s: (0.9) 2nd speed rpm : 300.0 Rack travel in mm : 5.6...5.9 Del.quantity cm3/ : 1.6...2.2 100 s: (1.3...2.5) 8.0 : Emp Spread 100 s: (1.2) GUIDE SLEEVE POSITION Control-lever position Degree: -2 Speed rpm: 600 Rack travel in mm: 19.20...20.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 600 Aneroid pressure h: 800
Del.quantity : 235.0...237.0
1000 : (232.0...240.0)
Spread cm3 : 5.00
1000 : (9.00) RATED SPEED 1st version Setting point: Speed : 600 rpm

F03

Rack travel in mm: 20.0 Testing: 1st rack travel in: 12.00 Speed rpm : 1095...1110 2nd rack travel in: 4.00 : 1160...1190 Speed DDM 4th rack travel in: 1300 : 0.00...1.50 Speed rpm LOW IDLE 1 Setting point w/out bumper spring Speed rpm : 300 Rack travel in mm : 5.7 Testing: speed rpm : 200 Minimum rack trave: 7.60 Speed rpm : 300
Rack travel in mm : 5.60...5.90
Rack travel in mm : 2.00
Speed rpm : 370...410 TORQUE CONTROL
Dimension a mm : 0.65 Torque control curve - 1st version 1st speed rpm : 1050
Rack travel in m: 13.00...13.20
2nd speed rpm : 750
Rack travel in m: 14.40...14.60 Aneroid/Altitude Compensator Test 1st version Setting Speed : 600 L DW hPa : 800 Pressure : 13.60...13.80 Rack travel mm Measurement 1/min: 600 Speed 1st pressure hPa : 200
Rack travel in m: 11.00...11.20
2nd pressure hPa : 450
Rack travel in m: 13.00...13.20
3rd pressure hPa : 1000
Rack travel in m: 13.70...13.80 \*
4th pressure hPa : 1125
Rack travel in m: 14.10 14.30 Rack travel in m: 14.10...14.30 5th pressure hPa : -Rack travel in m: 10.00...10.40 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS F04

1st version Aneroid pressure h: 1400 Speed rpm : 1050 Del.quantity cm3/ : 228.0...231.0 1000 s: (225.0...234.0) Spread cm3 : 8.00 1000 s: (12.0) Aneroid pressure h: 1400 : 750 Speed rpm Del.quantity cm3/: 250.0...254.0 1000 s: (247.0...257.0) cm3 : 8.00 1000 s: (12.0) Spread Speed rpm : 500
Del.quantity cm3/ : 146.0...148.0
1000 s: (143.0...151.0)
Spread cm3 : 8.00
1000 c //2000 Aneroid pressure h: 1000 s: (12.0) **BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 12.00 Speed rpm : 1095...1110 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 bel.quantity cm3/ : 220.0...240.0 1000 s: (216.0...244.0)

Remarks:

\* Increase in control-rod travel with respect to setting at least 0.1 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet Edition

11.01.93 Replaces

Test oil : ISO-4113

Combination no. : 9 400 087 425

Injection pump

Pump designation : PES6P120A720LS7181

EP type number : 0 412 726 870

Governor

Governor design. : RQ300/1050PA911-1

Governer no. : 0 421 801 481

Customer-spec. information

Customer : MERCEDES-BENZ

Engine : 0M447 LA

1st version kW : 294.0 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 100...120

Test nozzle holder

assembly : 1 688 901 019

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter

x Wall thickness

x Length mm : 6.00X1.50X1000

(A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10 : (4.95...5.15) Rack travel in mm : 9.00...12.00 Firing order : 6-2-4-1-1- 5- 3

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm: 600

Rack travel in mm : 15.20...15.40

Del.quantity cm3/: 27.4...27.6

100 s: (27.1...27.9)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0
Rack travel in mm : 5.8...6.2
Del.quantity cm3/ : 1.4...2.0
100 s: (1.1...2.3)
Spread cm3 : 0.8
100 s: (1.2)

GUIDE SLEEVE POSITION Control-lever position

Degree: -2

rpm : 600 Speed

Rack travel in mm : 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1000

: 274.0...276.0 Del.quantity

1000 : (271.0...279.0) cm3 : 5.00 1000 : (9.00)

Spread

RATED SPEED

1st version

Setting point:

: 600 Speed rpm

F05

Del.quantity cm3/: 269.0...272.0 1000 s: (266.0...275.0) Testing: Spread : 8.00 cm3 1st rack travel in: 13.90 Speed rpm : 1095...1110 1000 s: (12.0) Aneroid pressure h: 1600 2nd rack travel in: 4.00 Speed rpm: 700 Del.quantity cm3/: 298.0...301.0 1000 s: (295.0...304.0) rpm : 1150...1180 Speed 4th rack travel in: 1300 rpm : 0.00...1.50 : 8.00 Speed cm3 Spread 1000 s: (12.0) LOW IDLE 1 Aneroid pressure h: -Setting point w/out bumper spring Speed rpm Del.quantity cm3/: 143.0...145.0 1000 s: (140.0...148.0) Speed rpm : 300 Rack travel in mm: 6.0 Speed rpm: 300
Rack travel in mm: 5.80...6.20
Rack travel in mm: 2.00
Speed rpm: 360...400 Spread cm3 : 8.001000 s: (12.0) BREAKAWAY TORQUE CONTROL : 0.50 Dimension a mm 1st version 2nd speed rpm : 1050 Rack travel in m: 14.90...15.10 3rd speed rpm : 850 Rack travel in m: 15.60...15.80 1mm rack travel less than full load rack tr: 13.90 Speed rpm : 1095...1110 Speed Aneroid/Altitude STARTING FUEL DELIVERY Compensator Test Speed rpm : 100 Del.quantity cm3/ : 250.0...270.0 1000 s: (246.0...274.0) 1st version Setting : 600 Speed rpm 1000 Pressure hPa Remarks: Rack travel mm 15.20...15.40 Measurement 1/min: 600 Speed 1st pressure hPa : 300 Rack travel in m: 10.90...11.10 2nd pressure hPa : 700
Rack travel in m: 14.00...14.10
3rd pressure nPa : 1300
Rack travel in m: 15.40...15.60
4th pressure hPa : 1450 Rack travel in m: 15.90...16.10 5th pressure hPa : Rack travel in m: 10.00...10.50 START CUT-OUT Speed 1/min : 220 (240) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1600 rpm : 1050 Speed F06

Rack travel in mm: 20.0

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet 11.01.93 Edition Replaces Test oil : ISO-4113 Combination no. : 9 400 087 433 Injection pump Pump designation : PES6P120A720LS7176 -10 EP type number : 0 412 726 869 Governor Governor design. : RQ300/1050PA911-4 : 9 420 080 318 Governer no. Customer-spec. information : MERCEDES-BENZ Customer Engine : 0M447 A : 210.0 : 2100 1st version kW Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 100...120 Test nozzle holder : 1 688 901 105 assembly Opening pressure, bar : 207...210 Orifice plate diameter mm : 0,8 Test lines : 1 680 750 067 Outside diameter x Wall thickness x Length mm : 6.00x1.50x1000

(A) Injection pump setting values

per values \_

Insp. values in parentheses Set equal delivery quant.

BEGINNING OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 9.00...12.00 Firing order : 6-2-4-1-5-3 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 6 BASIC SETTING 1st speed rpm : 600 Rack travel in mm : 14.50...14.70 Del.quantity cm3/: 21.5...21.7 100 s: (21.2...22.0) Spread cm3 : 0.5100 s: (0.9) 2nd speed rpm : 300.0 Rack travel in mm : 6.0...6.4 Del.quantity cm3/ : 1.0...1.6 100 s: (0.7...1.9) cm3 : 0.6 100 s: (1.2) GUIDE SLEEVE POSITION Control-lever position Degree: -2 Speed rpm : 600 Rack travel in mm : 19.20...20.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 600 Aneroid pressure h: 800 Del.quantity : 215.5...217.5 1000 : (212.5...220.5) Spread cm3 : 5.00 1000 : (9.00) RATED SPEED 1st version Setting point: Speed : 600 rpm

Rack travel in mm: 20.0  Testing: 1st rack travel in: 12.60 Speed rpm: 10951110 2nd rack travel in: 4.00 Speed rpm: 11601190 4th rack travel in: 1260 Speed rpm: 0.001.50  LOW IDLE 1 Setting point w/out bumper spring Speed rpm: 300 Rack travel in mm: 6.2	1st version Aneroid pressure h: 1200 Speed rpm : 1050 Del.quantity cm3/ : 192.5196.5 1000 s: (189.5199.5) Spread cm3 : 8.00 1000 s: (12.0) Aneroid pressure h: 1200 Speed rpm : 750 Del.quantity cm3/ : 220.0223.0 1000 s: (217.0226.0) Spread cm3 : 8.00 1000 s: (12.0) Aneroid pressure h: -
Testing: Speed rpm : 200 Minimum rack trave: 7.70 Speed rpm : 300 Rack travel in mm : 6.006.40 Rack travel in mm : 2.00 Speed rpm : 380420	Speed rpm : 500 Del.quantity cm3/: 131.0133.0 1000 s: (128.0136.0) Spread cm3 : 8.00 1000 s: (12.0)  BREAKAWAY
TORQUE CONTROL Dimension a mm : ? Torque control curve — !st version 1st speed rpm : 1050 Rack travel in m: 13.6013.80 2nd speed rpm : 750 Rack travel in m: 15.0015.20	1st version 1mm rack travel less than full load rack tr: 12.60 Speed rpm : 10951110 STARTING FUEL DELIVERY
Aneroid/Altitude Compensator Test  1st version Setting Speed rpm : 600 Pressure hPa : 800 Rack travel mm : 14.5014.70	Speed rpm : 100 Del.quantity cm3/ : 205.0225.0 1000 s: (201.0229.0)  Remarks:
Measurement Speed 1/min: 600	
1st pressure hPa : 300 Rack travel in m: 11.8012.00 2nd pressure hPa : 550 Rack travel in m: 13.5013.70 3rd pressure hPa : 1050 Rack travel in m: 14.7014.80 4th pressure hPa : — Rack travel in m: 10.7011.00	+ + + + + + + + + + +
START CUT-OUT  Speed 1/min: 220 (240)	‡
FUEL DELIVERY CHARACTERISTICS	<del>+</del> <del>+</del> <del>+</del> <del>+</del> <del>+</del> <del>+</del> <del>+</del> <del>+</del> <del>+</del> <del>+</del>

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet Edition : MB

11.01.93

Replaces : ISO-4113 Test oil

Combination no. : 9 400 087 453

Injection pump

Pump designation : PES5P120A720LS7174

: 0 412 725 815 EP type number

Governor

Governor design. : RQV300...1050PA979 : 9 420 080 298

Governer no.

Customer-spec. information

Customer : MERCEDES-BEN7

Engine : 0M449 A

1st version kw : 184.0 Rated speed : 2100

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 100...120

Test nozzle holder

: 1 688 901 019 assembly

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter

x Wall thickness

x Length mm : 6.00X1.50X1000

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 9.00...12.00 Firing order : 1- 3- 5- 4-

Phasing : 0-72-144-216-288

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 5

BASIC SETTING

1st speed rpm: 600

Rack travel in mm : 14.10...14.30

Del.quantity cm3/: 19.6...19.8

100 s: (19.3...20.1)

Spread cm3 : 0.5

100 s: (0.9)

2nd speed rpm : 300.0 Rack travel in mm : 6.7...6.9 Del.quantity cm3/ : 1.5...2.1 100 s: (1.2...2.4)

cm3 : 0.8Spread

100 s: (1.2)

(B) Setting of injection pump

with governor

GUIDE SLEEVE TRAVEL

1050 1st speed rpm :

7.40...7.50 travel mm 2nd speed 750 rpm

4.80...5.20 travel mm

3rd speed 500 rpm

: 2.70...3.10 travel mm

300 4th speed mgn

: 1.10...1.50 travel mm

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1 Speed rpm : 1140 Rack travel in mm : 15.20...17.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed mpm : 600 Aneroid pressure h: 650
Del.quantity : 196.0...198.0
1000 : (193.0...201.0)
Spread cm3 : 5.00 1000 : (9.00) RATED SPEED 1st version Control lever position degrees: 112...120 Testing: 1st rack travel in: 14.10 Speed rpm : 1090...1100 2nd rack travel in: 4.00 Speed rpm : 1230...1260 4th rack travel in: 1350 Speed : 0.00...1.00 rpm LOW IDLE 1 Control lever position degrees: 66...74 Testing: Speed rpm Minimum rack trave: 8.50 rpm Rack travel in mm : 6.70...6.90 CONSTANT REGULATION rpm : 300...370 Speed Aneroid/Altitude Compensator Test 1st version Setting : 600 Speed rpm Pressure hPa : 650 Rack travel mm : 14.10...14.30 Measurement 1/min: 600 Speed 1st pressure hPa : 250 Rack travel in m: 12.20...12.40 2nd pressure hPa : 400 Rack travel in m: 13.50...13.70 3rd pressure hPa : 750
Rack travel in m: 14.20...14.30 \*
4th pressure hPa : 850
Rack travel in m: 14.60...14.80 5th pressure hPa : Rack travel in m: 11.80...12.10 START CUT-OUT

1/min : 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 rpm : 1050 Del.quantity cm3/: 217.5...220.5 1000 s: (214.5...223.5) : 8.00 Spread cm31000 s: (12.0) Aneroid pressure h: 1200 Speed rpm Del.quantity cm3/: 218.0...222.0 1000 s: (215.0...225.0) Spread cm3: 8.00 1000 s: (12.0) Aneroid pressure h: Speed rpni Del.quantity cm3/: 148.0...150.0 1000 s: (145.0...153.0) cm3 : 8.00 Spread 1000 s: (12.0) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 14.10 Speed rpm : 1090...1100 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 220.0...240.0 1000 s: (216.0...244.0)

Remarks:

\* Increase in control-rod travel with respect to setting at least 0.1 mm

: 2.60...2.70 : (2.55...2.75) : 9.00...12.00 : 1-5-3-6-BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm Note remarks Rack travel in mm : Firing order 6- 2- 4 : VOL Test sheet . ž1.01.93 Edition : 11.92 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 9 400 087 458 Tolerance + - ° : 0.50 (0.75) Injection pump Time to cyl. no. : 1 Pump designation : PE6P120A320RS3186 EP type number : 0 411 325 755 BASIC SETTING Governor Governor design. : RQV250...1025PA657 1st speed rpm: 700 -29 : 9 420 080 312 Governer no. Rack travel in mm : 12.10...12.20 Customer-spec. information Del.quantity cm3/: 21.0...21.2 Customer : VOLVO 100 s: (20.7...21.5) Engine : TD102FS cm3 : 0.5Spread 1st version kW : 250.0 100 s: (0.9) TEST BENCH REQUIREMENTS 2nd speed rpm : 250.0 Rack travel in mm : 3.9...4.1 Del.quantity cm3/ : 1.6...2.1 100 s: (1.3...2.3) Spread cm3 : 0.5 Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 100 s: (0.7) Inlet press., bar: 1.50 (B) Setting of injection pump with governor Test nozzle holder assembly : 1 688 901 019 GUIDE SLEEVE TRAVEL 250 1.10...1.30 1st speed rpm : Opening travel mm pressure, bar : 207...210 500 2nd speed rpm 4.10...4.90 travel mm Orifice plate 700 3rd speed rpm diameter mm : 0,8 6.30...6.70 travel mm 4th speed rpm 900 6.30...6.70 travel mm Test Lines : 1 680 750 067 5th speed rpm 7.30...7.80 travel mm Outside diameter x Wall thickness GUIDE SLEEVE POSITION x Length mm : 6.00x1.50x1000 Control-lever position Degree: -1 (A) Injection pump setting values rpm : 1080 Speed Insp. values in parentheses Rack travel in mm: 15.20...17.80 Set equal delivery quant. per values FULL LOAD DELIV. AT FULL LOAD STOP BEGINNING OF DELIVERY 1st version Test pressure, bar: 25...27 rpm : 700 Speed

Aneroid pressure h: 1000

Del.quantity : 210.0...212.0 : (207.0...215.0) Sm2 : 5.00 Spread : (9.00) 1000 RATED SPEED 1st version Control lever position degrees: 116...124 Testing: 1st rack travel in: 11.10 Speed rpm : 1085...1095 2nd rack travel in: 4.00 : 1145...1175 Speed rpm 4th rack travel in: 1300 Speed rpm: 0.00...1.00 LOW IDLE 1 Control lever position degrees: 61...69 Testing: Speed rpm Minimum rack trave: 5.40 Speed rom Rack travel in mm : 3.90...4.10 CONSTANT REGULATION Speed rpm : 250...350 Aneroid/Altitude Compensator Test 1st version Setting Speed rpm hPa : 1000 Pressure Rack travel mm : 12.10...12.20 Measurement 1/min : 500Speed 1st pressure hPa : -Rack travel in m: 8.70...9.00 2nd pressure hPa : 75 Rack travel in m: 8.90...9.00 3rd pressure hPa : 425 Rack travel in m: 14.80...15.10 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: -Speed rpm : 700
Del.quantity cm3/ : 146.0...148.0
1000 s: (143.0...151.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 11.10 Speed rpm : 1085...1095

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 250
Rack travel in mm : 3.90...4.10
Del.quantity cm3/ : 16.0...21.0
1000 s: (13.5...23.5)
Spread cm3 : 5.00
1000 s: (7.00)

Remarks:

Delivery-valve spring pre-tension = 2.40...2.60 mm.
Permissible alteration from 2.20...2.90 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : MB

: 11.01.93 Edition

Replaces : ISO-4113 Test oil

Combination no. : 9 400 087 459

Injection pump

Pump designation : PES6P120A720LS7181

EP type number : 0 412 726 870

Governor

Governor design. : RQ300/1050PA911-2

Governer no. : 9 420 080 313

Customer-spec. information

Customer : MERCEDES-BENZ

Engine : OM447 LA

: 298.0 1st version kW : 2100 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 100...120

Test nozzle holder

: 1 688 901 105 assembly

Openina

pressure, bar : 207...210

Orifice plate

diameter mm : 0,8

Test lines : 1 680 750 067

Outside diameter

x Wall thickness

: 6.00x1.50x1000 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values \_\_\_\_

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10 : (4.95...5.15)
Rack travel in mm : 9.00...12.00

Firing order : 6-2-4-1-5-3

: 0-60-120-180-240-300 Phasing

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm : 60G

Rack travel in mm : 15.30...15.50

Del.quantity cm3/: 27.9...28.1

100 s: (27.6...28.4)

cm3 : 0.5Spread

100 s: (0.9)

rpm : 300.02nd speed

Rack travel in mm : 5.8...6.2 Del.quantity cm3/: 1.2...1.8

100 s: (0.9...2.1)

cm3 : 0.8 100 s: (1.2) Spread

GUIDE SLEEVE POSITION Control-Lever position

Degree: -Z

Speed rpm: 600 Rack travel in mm: 19.20...20.80

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 600

Aneroid pressure h: 1050 Del.quantity : 279.0...281.0 1000 : (276.0...284.0)

cm3 : 5.00 Spread

1000 : (9.00)

RATED SPEED

1st version

Setting point:

: 600 Speed rpm

Rack travel in mm: 20.0 Testing: 1st version 1st rack travel in: 14.00 Aneroid pressure h: 1600 Speed rpm : 1095...1110 Speed : 1050 rpm 2nd rack travel in: 4.00 Speed rpm: 1145...1175 4th rack travel in: 1300 Speed rpm: 0.00...1.50 Del.quantity cm3/: 263.0...266.0 1000 s: (260.0...269.0) Spread cm3 : 8.00 1000 s: (12.0) Aneroid pressure h: 1600 LOW IDLE 1 Speed rpm 700 Del.quantity cm3/: 297.0...300.0 1000 s: (294.0...303.0) Setting point w/out bumper spring rpm : 300 Rack travel in mm : 6.0 Spread : 8.00 cm3 1000 s: (12.0) Testing: Aneroid pressure h: -Speed rpm: 500
Del.quantity cm3/: 124.0...126.0
1000 s: (121.0...129.0)
Spread cm3: 8.00
1000 s: (12.0) Speed rpm : 100 Minimum rack trave: 9.00 Speed rpm : 300 Minimum rack trave.

Speed rpm : 300

Rack travel in mm : 5.90...6.10

Rack travel in mm : 2.00

rpm : 380...420 TORQUE CONTROL BREAKAWAY Dimension a mm : 0.50 Torque control curve - 1st version 1st version st speed rpm: 1050
Rack travel in m: 14.90...15.10
nd speed rpm: 700
Rack travel in m: 16.10...16.30 1st speed 1mm rack travel less than 2nd speed full load rack tr: 14.00 rpm : 1095...1110 Speed Aneroid/Altitude STARTING FUEL DELIVERY Compensator Test Speed : 100 rpm Del.quantity cm3/: 265.0...285.0 1000 s: (261.0...289.0) 1st version Setting : 600 Speed rpm Pressure hPa : 1050 Remarks: Rack travel mm : 15.30...15.50 Measurement  $1/\min : 600$ Speed 1st pressure hPa : 360 Rack travel in m: 10.70...10.90 2nd pressure hPa : 740 Rack travel in m: 13.90...14.10 3rd pressure hPa : 1340 Rack travel in m: 15.50...15.70 4th pressure hPa : 1440 Rack travel in m: 15.80...15.90 5th pressure hPa : Rack travel in m: 9.20...9.70 START CUT-OUT 1/min : 220 (240) Speed FUEL DELIVERY CHARACTERISTICS

BOSCH INJ, PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB : 11.01.93 Edition Replaces est oil : ISO-4113 : 9 400 087 460 Combination no. Injection pump Pump designation : PES6P120A720LS7114 : 0 412 726 867 EP type number Governor Governor design. : RQ300/1050PA911-3 : 9 420 080 314 Governer no. Customer-spec. information : MERCEDES-BENZ Customer Engine : 0M447 LA : 260.0 : 2100 1st version kW Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 100...120 Test nozzle holder : 1 688 901 105 Opening : 207...210 pressure, bar Orifice plate diameter mm : 0,8 Test lines : 1 680 750 067 Outside diameter x Wall thickness x Length mm : 6.00X1.50X1000

(A) Injection pump setting values

per values \_\_\_

Insp. values in parentheses Set equal delivery quant.

BEGINNING OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 9.00...12.00 Firing order : 6-2-4-1-1- 5- 3 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 6 BASIC SETTING 1st speed rpm: 600 Rack travel in mm : 13.40...13.60 Del.quantity cm3/: 22.5...22.7 100 s: (22.2...23.0) cm3 : 0.5Spread 100 s: (0.9) 100 s: (1.2) GUIDE SLEEVE POSITION Control-lever position Degree: -2 Speed rpm : 600 Rack travel in mm : 19.20...20.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 600 Aneroid pressure h: 800 Del.quantity : 225.0...227.0 1000 : (222.0...230.0) Spread cm3 : 5.00 1000 : (9.00) RATED SPEED 1st version Setting point: Speed : 600 rom

Rack travel in mm : 20.0	†
Testing: 1st rack travel in: 12.20 Speed rpm: 10951110 2nd rack travel in: 4.00 Speed rpm: 11551185 4th rack travel in: 1300 Speed rpm: 0.001.50	1st version Aneroid pressure h: 1500 Speed rpm : 1050 Del.quantity cm3/: 213.0217.0 1000 s: (210.0220.0) Spread cm3 : 8.00 1000 s: (12.0)
LOW IDLE 1 Setting point w/out bumper spring Speed rpm : 300 Rack travel in mm : 6.0	Aneroid pressure h: 1500 Speed rpm: 800 Del.quantity cm3/: 237.5240.5 1000 s: (234.5243.5) Spread cm3: 8.00 1000 s: (12.0)
Testing: Speed rpm : 100 Minimum rack trave: 9.00 Speed rpm : 300 Rack travel in mm : 5.906.10 Rack travel in mm : 2.00 Speed rpm : 360400	Aneroid pressure h: - Speed rpm: 500 Del.quantity cm3/: 130.0132.0 1000 s: (127.0135.0) Spread cm3: 8.00 1000 s: (12.0)
TORQUE CONTROL Dimension a mm : 0.40 Torque control curve - 1st version 1st speed rpm : 1050 Rack travel in m: 13.1013.30 2nd speed rpm : 800 Rack travel in m: 14.0014.20	BREAKAWAY  1st version 1mm rack travel less than  full load rack tr: 12.20 Speed rpm : 10951110
Aneroid/Altitude Compensator Test	T STARTING FUEL DELIVERY
1st version Setting Speed rpm : 600 Pressure hPa : 800 Rack travel mm : 13.4013.60	Speed rpm : 100 Del.quantity cm3/ : 220.0240.0 1000 s: (216.0244.0) Remarks:
Measurement Speed 1/min : 600	<del>†</del> <del>†</del>
1st pressure hPa : 240 Rack travel in m: 10.5010.70 2nd pressure hPa : 560 Rack travel in m: 12.5012.70 3rd pressure hPa : 920 Rack travel in m: 13.6013.70 4th pressure hPa : 980 Rack travel in m: 13.8013.90 5th pressure hPa : - Rack travel in m: 9.509.80	T
START CUT-OUT	‡
	.1.
Speed 1/min : 220 (240)	+
Speed 1/min : 220 (240) FUEL DELIVERY CHARACTERISTICS	† † † †

BOSCH INJ. PUMP TEST SPECIFICATIONS BEGINNING OF DELIVERY Note remarks Test pressure, bar: 25...27 Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 9.00...12.00 Test sheet : MB Edition : 11.01.93 Replaces Test oil : ISO-4113 Firing order : 1- 3- 5-: 9 400 087 461 Combination no. Injection pump Phasing : 0-72-144-216-288 Pump designation : PES5P120A720LS7174 -10 Tolerance + - ° : 0.50 (0.75) : 0 412 725 815 EP type number Governor Time to cyl. no. : 5 Governor design. : RQ300/1050PA774-6 : 9 420 080 315 Governer no. BASIC SETTING Customer-spec. information rpm: 600 1st speed : MERCEDES-BENZ Customer Rack travel in mm: 13.90...14.10 Engine : OM449 A Del.quantity cm3/: 19.3...19.5 1st version kW : 184.0 : 2100 100 s: (19.0...19.8) Rated speed TEST BENCH REQUIREMENTS Spread cm3 : 0.5Test oil 100 s: (0.9) inlet temp. °C : 38...42 rpm : 300.02nd speed Overflow valve Rack travel in mm : 6.6...7.0 Del.quantity cm3/: 1.7...2.3 100 s: (1.4...2.6) Spread cm3 : 0.8 : 1 417 413 025 Inlet press., bar: 1.50 100 s: (1.2) Overflow quantity min. 1/h: 100...120 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -2 : 1 688 901 105 assembly rpm : 600 Speed Rack travel in mm : 19.20...20.80 Opening : 207...210 FULL LOAD DELIV. AT FULL LOAD STOP pressure, bar Orifice plate 1st version diameter mm : 0,8 Speed rpm Aneroid pressure h: 700 1000 : (190.5...195.5) Del.quantity Test Lines : 1 680 750 067 cm3: 5.00 Spread Outside diameter 1000 : (9.00) x Wall thickness x Length mm : 6.00X1.50X1000 RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set equal delivery quant. Setting point: per values \_\_\_ Speed : 600 rpm

cm3 : 8.00 1000 s: (12.0) Rack travel in mm: 20.0 Spread Testing: Aneroid pressure h: 1300 1st rack travel in: 13.70 Speed 750 rpm : 1095...1110 Del.quantity cm3/: 209.0...213.0 1000 s: (206.0...216.0) Speed rpm 2nd rack travel in: 4.00 : 1160...1190 Speed rom Spread cm3 : 8.00 4th rack travel in: 1300 1000 s: (12.0) : 0.00...1.50 Speed rpm Aneroid pressure h: -Speed rpm Dei.quantity cm3/: 131.0...133.0 1000 s: (128.0...136.0) LOW IDLE 1 Setting point w/out bumper spring Speed rpm : 300 cm3 : 8.00 1000 s: (12.0) Speed rpm : 300 Rack travel in mm : 6.8 Spread Testing: Speed rpm BREAKAWAY speed rpm : 300
Rack travel in mm : 6.70...6.90
Rack travel in mm : 2.00
Speed rpm : 200 Minimum rack trave: 10.00 1st version 1mm rack travel less than full load rack tr: 13.70 Speed rpm : 1095...1110 Speed Aneroid/Altitude Compensator Test STARTING FUEL DELIVERY 1st version : 100 rpm Speed Del.quantity cm5/: 197.0...217.0 1000 s: (193.0...221.0) Setting : 600 Speed rom hPa 700 Pressure Rack travel mm : 13.90...14.10 Remarks: Measurement  $1/\min : 600$ Speed 1st pressure hPa : 340 Rack travel in m: 11.60...11.80 2nd pressure hPa : 520
Rack travel in m: 13.00...13.20
3rd pressure hPa : 960
Rack travel in m: 14.10...14.20
4th pressure hPa : 1040 Rack travel in m: 14.30...14.40 5th pressure hPa : Rack travel in m: 10.80...11.10 START CUT-OUT Speed 1/min : 220 (240) FUEL DELIVERY CHARACTERISTICS ist version Aneroid pressure h: 1300 Speed rpm : 1050 Del.quantity cm3/ : 208.5...211.5 1000 s: (205.5...214.5)

BOSCH INJ. PUMP TEST SPECIFICATIONS BEGINNING OF DELIVERY Note remarks Test pressure, bar: 25...27 Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 9.00...12.00 Firing order : 1-3-5-4-Test sheet Edition : 17.01.93 Replaces Test oil : ISO-4113 : 9 400 087 462 Combination no. Injection pump Phasing : 0-72-144-216-288 Pump designation : PES5P120A720LS7175 -10 Tolerance + - ° : 0.50 (0.75) : 0 412 725 816 EP type number Governor Time to cyl. no. : 5 Governor design. : RQ300/1050PA774-7 : 9 420 080 316 Governer no. BASIC SETTING Customer—spec. information 1st speed rpm: 600 : MERCEDES-BENZ Customer Rack travel in mm : 13.60...13.80 Engine : 0M449 LA Del.quantity cm3/: 23.3...23.5 : 220.0 : 2100 1st version kW Rated speed 100 s: (23.0...23.8) TEST BENCH REQUIREMENTS Spread cm3 : 0.5Test oil 100 s: (0.9) inlet temp. °C : 38...42 rpm : 300.02nd speed Rack travel in mm : 5.5...5.9 Del.quantity cm3/ : 1.1...1.7 Overflow valve : 1 417 413 025 100 s: (0.8...2.0) Inlet press., bar: 1.50 Spread cm3 : 0.8100 s: (1.2) Overflow quantity min. 1/h: 108...120 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -2 rpm : 600 : 1 688 901 105 assembly Rack travel in mm : 19.20...20.80 Opening pressure, bar : 207...210 FULL LOAD DELIV. AT FULL LOAD STOP Orifice plate 1st version diameter mm : 0,8 Speed rpm : 600 Aneroid pressure h: 850 Del.quantity : 233.5...235.5 1000 : (230.5...238.5) Test lines : 1 680 750 067 : 5.00 cm3 Spread Outside diameter 1000 : (9.00) x Wall thickness x Length mm : 6.00x1.50x1000 RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set equal delivery quant. Setting point: per values \_\_\_\_

: 600

rpm

Speed

Rack travel in mm: 20.0	
Testing: 1st rack travel in: 12.70 Speed rpm : 10951110 2nd rack travel in: 4.00 Speed rpm : 11651195 4th rack travel in: 1300 Speed rpm : 0.001.50  LOW IDLE 1 Setting point w/out bumper spring Speed rpm : 300 Rack travel in mm : 5.7	1st version Aneroid pressure h: 1400 Speed rpm : 1050 Del.quantity cm3/: 231.0234.0 1000 s: (228.0237.0) Spread cm3 : 8.00 1000 s: (12.0) Aneroid pressure h: 1400 Speed rpm : 750 Del.quantity cm3/: 251.0255.0 1000 s: (248.0258.0) Spread cm3 : 8.00
Testing: Speed rpm: 100 Minimum rack trave: 8.50 Speed rpm: 300 Rack travel in mm: 5.605.80 Rack travel in mm: 2.00 Speed rpm: 365405	1000 s: (12.0)  Aneroid pressure h: -  Speed rpm : 500  Del.quantity cm3/: 125.0127.0  1000 s: (122.0130.0)  Spread cm3 : 8.00  1000 s: (12.0)
TORQUE CONTROL Dimension a mm : 0.65 Torque control curve - 1st version 1st speed rpm : 1050 Rack travel in m: 13.7013.90 2nd speed rpm : 750 Rack travel in m: 14.5014.70	BREAKAWAY  1st version 1mm rack travel less than  full load rack tr: 12.70 Speed rpm : 10951110
Aneroid/Altitude Compensator Test	STARTING FUEL DELIVERY
1st version Setting Speed rpm : 600 Pressure hPa : 850 Rack travel mm : 13.6013.80	Speed rpm : 100 Del.quantity cm3/ : 222.0242.0 1000 s: (218.0246.0)  Remarks:
Measurement Speed 1/min: 600	
1st pressure hPa : 340 Rack travel in m: 10.3010.40 2nd pressure hPa : 600 Rack travel in m: 12.4012.60 3rd pressure hPa : 1160 Rack travel in m: 13.8013.90 4th pressure hPa : 1240 Rack travel in m: 14.1014.30 5th pressure hPa : - Rack travel in m: 9.309.60	
START CUT-OUT	
Speed 1/min: 220 (240)	
FUEL DELIVERY CHARACTERISTICS ‡	
F20	

BOSCH INJ. PUMP TI	EST SPECIFICATIONS	†
Note remarks		Prestroke mm : 4.604.70 : (4.554.75)
Test sheet Edition Replaces	: MB : 11.01.93	Rack travel in mm : 21.000.00 Firing order : 6-2-4-1-5-3
Test oil Combination no.	: ISO-4113 : 9 400 087 464	Phasing : 0-60-120-180-240-300
Injection pump Pump designation	: PES6P120A720LS7257	Tolerance + - ° : 0.50 (0.75)  Time to cyl. no. : 6
EP type number Governor	: 9 400 087 086	BASIC SETTING
Governor design. Governer no.	: RQV3001050PA1029 : 9 420 080 325	1st speed rpm: 700
Customer—spec. in		Rack travel in mm : 13.6013.80
Customer	: MERCEDES-BENZ	Del.quantity cm3/: 25.826.0
Engine	: OM 447 LA	100 s: (25.526.3)
1st version kW Rated speed	: 257.6 : 2100	Spread cm3 : 0.5
TEST BENCH REQUIR		100 s: (0.9)
Test oil inlet temp. °C	: 3842	2nd speed rpm : 300.0 Rack travel in mm : 5.15.4 Del.quantity cm3/ : 1.42.0 100 s: (1.12.3)
Overflow valve	: 1 419 992 198	Spread cm3 : 0.8 100 s: (1.2)
Inlet press., bar	: 1.50	(B) Setting of injection pump with governor
Test nozzle holder assembly	r : 1 688 901 105	+ GUIDE SLEEVE TRAVEL + 1st speed rpm : 1050
Opening pressure, bar	: 207210	travel mm : 7.707.90 2nd speed rpm : 300 travel mm : 0.501.00
Orifice plate diameter mm	: 0,8	- 3rd speed rpm : 500 - travel mm : 3.003.50 - 4th speed rpm : 700 - travel mm : 5.205.70
Test lines	: 1 680 750 075	5th speed rpm : 1165 travel mm : 9.209.70
Outside diameter x Wall thickness x Length mm	: 8.00x2.50x1000	GUIDE SLEEVE POSITION Control-lever position Degree: -1
(A) Injection pump Insp. values Set equal del per values	in parentheses ivery quant.	Speed rpm : 1120 Rack travel in mm : 15.2017.80 FULL LOAD DELIV. AT FULL LOAD STOP
BEGINNING OF DELIV Test pressure, bar		1st version Speed rpm : 700

Aneroid pressure h: 1000 Del.quantity : 258.0...260.0 1000 : (255.0...263.0) 2nd pressure hPa : 250 Rack travel in m: 10.20...10.40 3rd pressure hPa : 700 Rack travel in m: 13.10...13.30 : 5.00 Spread cm3 1000 : (9.00)START CUT-OUT RATED SPEED 1/min : 220 (240) Speed 1st version Control lever FUEL DELIVERY CHARACTERISTICS position degrees: 116...124 Testing: 1st version 1st rack travel in: 12.40 Speed rpm : 1090...1100 2nd rack travel in: 4.00 Speed rpm : 1150...1180 4th rack travel in: 1300 Speed rpm : 0.00...1.00 Aneroid pressure h: 1000 Speed rpm : 1050
Del.quantity cm3/: 244.5...247.5
1000 s: (241.5...250.5) Spread cm3 : 8.001000 s: (12.0) Aneroid pressure h: -Speed rpm : 500
Del.quantity cm3/: 124.0...126.0
1000 s: (121.0...129.0) LOW IDLE 1 Control Lever position degrees: 78...86 cm3 : 8.00 Spread Testing: 1000 s: (12.0) : 100 Speed rpm Minimum rack trave: 8.00 Speed rpm : 300 Rack travel in mm : 5.10...5.30 Speed : 300 BREAKAWAY 1st version CONSTANT REGULATION 1mm rack travel less than rpm : 300...450 Speed full load rack tr: 12.40 Speed rpm : 1090...1100 TORQUE CONTROL Speed Dimension a mm : 0.20 Torque control curve - 1st version STARTING FUEL DELIVERY : 1050 1st speed rpm Rack travel in m: 13.40...13.60 nd speed rpm : 700 Rack travel in m: 13.60...13.80 rd speed rpm : 850 2nd speed rpm Speed rpm : 100 Del.quantity cm3/ : 250.0...270.0 1000 s: (246.0...274.0) 3rd speed Rack travel in m: 13.60...13.80 4th speed rpm : 950 Rack travel in m: 13.40...13.60 Remarks: Aneroid/Altitude Compensator Test 1st version Setting Speed Pressure hPa : 1000 Rack travel mm : 13.60...13.80 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 9.80...10.10 F22

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 25...27 : 4.60...4.70 : (4.55...4.75) Note remarks Prestroke mm Test sheet Edition Rack travel in mm : 21.00...0.00 : 11.01.93 Firing order : 6-2-4-1-Replaces Test oil : ISO-4113 Combination no. : 9 400 087 466 : 0-60-120-180-240-300 Phasing Phasing Injection pump Tolerance + - ° : 0.50 (0.75) Pump designation : PES6P120A720LS7257 Time to cyl. no. : 6 EP type number : 9 400 087 086 Governor BASIC SETTING Governor design. : RQV300...1050PA1029 1st speed rpm : 700 : 9 420 080 327 Governer no. Rack travel in mm : 15.00...15.20 Customer—spec. information Customer : MERCEDES-BENZ Del.quantity cm3/: 31.3...31.5 : OM 447 LA Engine 100 s: (31.0...31.8) : 301.8 1st version **KW** Spread cm3 : 0.5: 2100 Rated speed 100 s: (0.9) TEST BENCH REQUIREMENTS 2nd speed rpm : 300.0 Rack travel in mm : 5.1...5.4 Del.quantity cm3/ : 1.4...2.0 100 s: (1.1...2.3) Test oil inlet temp. °C : 38...42 Overflow valve : 0.8 Spread : 1 417 413 047 100 s: (1.2) Inlet press., bar: 1.50 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 105 assembly GUIDE SLEEVE TRAVEL 1st speed Opening travel mm 7.30...7.50 pressure, bar : 207...210 2nd speed 300 rpm travel mm 0.50...1.00 Orifice plate 3rd speed 500 rpm diameter mm : 0,8 3.10...3.60 travel mm 700 4th speed rpm 4.80...5.30 1200 travel mm Test lines : 1 680 750 075 5th speed rpm travel mm : 9.20...9.70 Outside diameter x Wall thickness GUIDE SLEEVE POSITION : 8.00x2.50x1000 x Length mm Control-lever position Degree: -1 rpm : 1150 (A) Injection pump setting values Insp. values in parentheses Rack travel in mm : 15.20...17.80 Set equal delivery quant. FULL LOAD DELIV. AT FULL LOAD STOP per values BEGINNING OF DELIVERY 1st version

Speed COM Aneroid pressure h: 1500
Del.quantity : 313.5...315.5
1000 : (310.5...318.5)
Spread cm3 : 5.00 1000 : (9.00) RATED SPEED 1st version Control lever position degrees: 116...124 Testing: 1st rack travel in: 14.00 Speed : 1095...1110 HOM 2nd rack travel in: 4.00 : 1180...1210 Speed riom 4th rack travel in: 1300 : 0.00...1.00 Speed COM LOW IDLE 1 Control Lever position degrees: 78...86 Testing: : 100 Speed rpm Minimum rack trave: 8.00 300 rpm Rack travel in mm : 5.10...5.30 CONSTANT REGULATION : 275...425 Speed rpm Aneroid/Altitude Compensator Test 1st version Setting Speed 500 rpm hPa : 1500 Pressure : 15.00...15.20 Rack travel TITT Measurement 1/min: 500 Speed 1st pressure hPa :-Rack travel in m: 10.70...11.00
2nd pressure hPa : 250
Rack travel in m: 11.10...11.30
3rd pressure hPa : 800 Rack travel in m: 14.00...14.20 START CUT-OUT Speed 1/min: 220 (240) FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1500
Speed rpm : 1050
Del.quantity cm3/: 301.5...304.5
1000 s: (298.5...307.5)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: Speed rpm : 500
Del.quantity cm3/: 143.0...145.0
1000 s: (140.0...148.0)
Spread cm3 : 8.00
1000 s: (12.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 14.00 Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 297.0...317.0 1000 s: (293.0...321.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS : 5.20...5.30 : (5.15...5.35) : 9.00...12.00 : 1- 3- 5- 4-Prestroke mm Note remarks Rack travel in mm : Test sheet Firing order 2 : 11.01.93 Edition Replaces Test oil : ISO-4113 : 0-72-144-216-288 Phasing Combination no. : 9 400 087 467 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES5P120A720LS7174 Time to cyl. no. : 5 -10 : 0 412 725 815 EP type number BASIC SETTING Governor Governor design. : RQ300/1050PA774-8 1st speed rpm: 750 : 9 420 080 328 Governer no. Rack travel in mm : 13.90...14.10 Customer-spec. information Customer : MERCEDES-BENZ Del.quantity cm3/: 19.7...19.9 Engine : 0M 449 A 100 s: (19.4...20.2) 1st version kW : 170.0 Spread cm3 : 0.5Reted speed : 2100 100 s: (0.9) TEST BENCH REQUIREMENTS rpm : 300.0 2nd speed Test oil Rack travel in mm : 6.6...7.0 Del.quantity cm3/ : 1.4...2.0 inlet temp. °C : 38...42 100 s: (1.1...2.3) Overflow valve cm3 : 0.8 Spread : 1 417 413 025 100 s: (1.2) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -2 : 1 688 901 105 rpm : 600 assembly Speed Rack travel in mm : 19.20...20.80 **Openina** pressure, bar : 207...210 FULL LOAD DELIV. AT FULL LOAD STOP Orifice plate 1st version diameter mm : 0,8 Speed rpm Aneroid pressure h: 800 Del.quantity : 197.5...199.5 1000 : (194.5...202.5) Test lines : 1 680 750 075 ; 5.00 ; (9.00) cm3 Spread Outside diameter 1000 x Wall thickness x Length mm : 8.00X2.50X1000 RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set equal delivery quant. Setting point: per values Speed rpm : 600 Rack travel in mm : 20.0 BEGINNING OF DELIVERY

Testing:

Test pressure, bar: 25...27

1st rack travel in: 13.00 Speed rpm: 1095...1110
2nd rack travel in: 4.00
Speed rpm: 1155...1185
4th rack travel in: 1300
Speed rpm: 0.00...1.50 LOW IDLE 1 Setting point w/out bumper spring Speed rpm : 300 Rack travel in mm : 6.8 : 300 Testing: Speed rpm: 100
Minimum rack trave: 9.50
Speed rpm: 300
Rack travel in mm: 6.70...6.90
Rack travel in mm: 2.00
Speed rpm: 395...435 Aneroid/Altitude Compensator Test 1st version Setting rpm : 600 hPa : 800 mm : 13.90...14.10 Speed Pressure Rack travel mm Measurement 1/min: 600 Speed 1st pressure hPa : -Rack travel in m: 10.90...11.20 2nd pressure hPa : 270 Rack travel in m: 11.80...11.90 3rd pressure hPa : 450 Rack travel in m: 13.10...13.40 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 800 Speed rpm : 1050
Del.quantity cm3/: 193.0...196.0
1000 s: (190.0...199.0) cm3 : 8.00 1000 s: (12.0) Spread Aneroid pressure h: -

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 13.00 Speed rpm : 1095...1110

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 150.0...170.0 1000 s: (146.0...174.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS : 5.20...5.30 : (5.15...5.35) : 9.00...12.00 : 1- 3- 5- 4-Prestroke mm Note remarks Rack travel in mm: Test sheet Firing order : MB : 11.01.93 Edition Replaces Test oil : ISO-4113 Phasing : 0-72-144-216-288 Combination no. : 9 400 087 468 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES5P120A720LS7174 Time to cyl. no. : 5 -10EP type number : 0 412 725 815 BASIC SETTING Governor Governor design. : RQV300...1050PA1041 : 9 420 080 329 1st speed rpm: 600 Governer no. Rack travel in mm : 13.90...14.10 Customer-spec. information Customer : MERCEDES-BENZ Del.quantity cm3/: 19.3...19.5 Engine : 0M449 A 100 s: (19.0...19.8) : 184.0 1st version kW Spread cm3 : 0.5Rated speed : 2100 100 s: (0.9) TEST BENCH REQUIREMENTS rpm : 300.02nd speed Test oil Rack travel in mm: 6.6...7.0 inlet temp. °C : 38...42 Del.quantity cm3/: 1.7...2.3 100 s: (1.4...2.6) Overflow valve cm3 : 0.8Spread : 1 417 413 025 100 s: (1.2) Inlet press., bar: 1.50 (B) Setting of injection pump with governor Test nozzle holder 1 688 901 105 assembly GUIDE SLEEVE TRAVEL 1st speed 300 ngn Opening travel mm 1.20...1.60 pressure, bar : 207...210 2nd speed rom 500 travel mm 3.00...3.50 Orifice plate 3rd speed 900 rpm : 0,8 diameter m travel mm 5.60...6.10 4th speed 1100 rpm travel mm 7.40...7.90 1210 Test Lines : 1 680 750 075 5th speed rpm 9.30...9.80 travel mm Outside diameter GUIDE SLEEVE POSITION x Wall thickness x Length mm : 8.00x2.50x1000 Control-lever position Degree: -1 (A) Injection pump setting values rpm : 1140 Insp. values in parentheses Rack travel in mm : 15.20...17.80 Set equal delivery quant. per values FULL LOAD DELIV. AT FULL LOAD STOP BEGINNING OF DELIVERY 1st version Test pressure, bar: 25...27 Speed rom : 600

F27

2

Aneroid pressure h: 700 Del.quantity : 193.5...195.5 1000 : (190.5...198.5) 5.00 Spread : 5.00 : (9.30) 1000 RATED SPEED 1st version Control lever position degrees: 111...119 Testing: 1st rack travel in: 13.70 Speed rpm : 1090...1100 2nd rack travel in: 4.00 : 1180...1210 Speed rpm 4th rack travel in: 1300 Speed rom : 0.00...1.50LOW IDLE 1 Control Lever position degrees: 66...74 Testing: : 100 Speed rpm Minimum rack trave: 8.50 Speed rpm Rack travel in mm : 6.70...6.90 CONSTANT REGULATION rpm : 350...500 Speed Aneroid/Altitude Compensator Test 1st version Setting Speed rom hPa : 700 Pressure : 13.90...14.10 Rack travel mm Measurement 1/min: 600 Speed 1st pressure hPa : 340
Rack travel in m: 11.60...11.80
2nd pressure hPa : 520
Rack travel in m: 13.00...13.20
3rd pressure hPa : 960
Rack travel in m: 14.10...14.20
4th pressure hPa : 1040
Pack travel in m: 14.30...14.40 Rack travel in m: 14.30...14.40 5th pressure hPa : Rack travel in m: 10.80...11.10 START CUT-OUT Speed 1/min : 220 (240)

F28

## FUEL DELIVERY CHARACTERISTICS

1st version Aneroid pressure h: 1300 : 1050 Speed rpm Del.quantity cm3/: 208.5...211.5 1000 s: (205.5...214.5) : 8.00 Spread cm31000 s: (12.0) Aneroid pressure h: 1300 Speed rpm : 750
Del.quantity cm3/: 209.0...213.0
1000 s: (206.0...216.0) Spread cm3 : 8.00 1000 s: (12.0) Aneroid pressure h: Speed rpm : 500 Del.quantity cm3/ : 131.0...133.0 1000 s: (128.0...136.0) : 8.00 Spread 1000 s: (12.0)

### **BREAKAWAY**

1st version 1mm rack travel less than

full load rack tr: 13.70 Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 197.0...217.0 1000 s: (193.0...221.0)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 9.00...12.00 Firing order : 6-2-4-1-5-3 Note remarks Test sheet Edition 05.03.93 Replaces Test oil : ISO-4113 : 0-60-120-180-240-300 Phasing Combination no. : 9 400 087 472 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6P120A720LS7114-3 Time to cyl. no. : 6 EP type number : 0 412 726 820 Governor BASIC SETTING Governor design. : RQV300...1050PA1041 1st speed rpm: 600 Governer no. : 9 420 080 335 Rack travel in mm : 13.40...13.60 Customer-spec. information Del.quantity cm3/: 22.5...22.7 Customer : MERCEDES-BENZ : 0M447 LA Engine 100 s: (22.2...23.0) : 257.0 : 2100 1st version kW Spread cm3 : 0.5Rated speed 100 s: (0.9) TEST BENCH REQUIREMENTS 2nd speed rpm : 300.0 Rack travel in mm : 5.8...6.2 Del.quantity cm3/ : 1.0...1.6 Test oil inlet temp. °C : 38...42 100 s: (0.7...1.9) Overflow valve Spread cm3 : 0.8: 1 417 413 025 100 s: (1.2) Inlet press., bar: 1.50 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 105 assembly GUIDE SLEEVE TRAVEL 1st speed rpm Openina travel mm 1.20...1.60 pressure, bar : 207...210 2nd speed 500 rpm travel mm 3.00...3.50 Orifice plate 3rd speed 900 **Lbw** diameter mm : 0,8 5.60...6.10 travel mm 4th speed 1100 travel mm : 7.40...7.90 Test Lines : 1 680 750 067 1210 5th speed rpm travel mm 9.30...9.80 Outside diameter x Wall thickness GUIDE SLEEVE POSITION : 6.00X1.50X1000 x Length mm Control-lever position Degree: -1 rpm : 1140 (A) Injection pump setting values Speed Insp. values in parentheses Set equal delivery quant. Rack travel in mm : 15.20...17.80 per values FULL LOAD DELIV. AT FULL LOAD STOP BEGINNING OF DELIVERY 1st version Test pressure, bar: 25...27 Speed rpm : 600

Aneroid pressure h: 780
Del.quantity : 225.0...227.0
1000 : (222.0...230.0) 3rd pressure hPa : 920 Rack travel in m: 13.60...13.70 4th pressure hPa : 980 : 5.00 Rack travel in m: 13.80...13.90 Spread cm3: (9.00) 1000 5th pressure hPa : Rack travel in m: 9.60...9.90 RATED SPEED START CUT-OUT 1st version Control lever 1/min: 220 (240) Speed position degrees: 110...118 FUEL DELIVERY CHARACTERISTICS Testing: 1st rack travel in: 12.20 Speed rpm : 1090...1100 2nd rack travel in: 4.00 1st version Aneroid pressure h: 1500 Speed rpm: 1165...1195 4th rack travel in: 1300 Speed rpm: 0.00...1.00 LOW IDLE 1 Control Lever position degrees: 63...71 Speed rpm : 800 Del.quantity cm3/: 237.5...240.5 Testing: 1000 s: (234.5...243.5) Speed rpm : 100 Minimum rack trave: 8.00 Spread cm3 : 8.00 1000 s: (12.0) Speed rom Aneroid pressure h: Rack travel in mm : 5.90...6.10 500 Speed rpm Del.quantity cm3/: 130.0...132.0 1000 s: (127.0...135.0) Spread cm3: 8.00 CONSTANT REGULATION Speed rpm : 325...500 1000 s: (12.0) TORQUE CONTROL Dimension a mm : 0.40 Torque control curve — 1st version 1st speed rpm : 1050 Rack travel in m: 13.10...13.30 **BREAKAWAY** 1st version rpm : 800 2nd speed 1mm rack travel less than Rack travel in m: 14.00...14.20 rd speed rpm : 930 Rack travel in m: 13.60...13.80 3rd speed full load rack tr: 12.20 : 1090...1100 Speed rpm Aneroid/Altitude STARTING FUEL DELIVERY Compensator Test Speed : 100 rpm Del.quantity cm3/: 220.0...240.0 1000 s: (216.0...244.0) 1st version Setting Speed : 600 rpm hPa : 780 mm : 13.40...13.60 Pressure Remarks: Rack travel mm Measurement 1/min: 600 Speed 1st pressure hPa : 240 Rack travel in m: 10.50...10.70 2nd pressure hPa : 560 Rack travel in m: 12.50...12.70

BOSCH INJ. PUMP TEST SPECIFICATIONS  Note remarks	Prestroke mm : 4.604.70 : (4.554.75)
Test sheet : MB Edition : 26.02.93 Replaces : - Test oil : ISO-4113	Rack travel in mm: 21.000.00 Firing order: 1-3-5-4-2
Combination no. : 9 400 087 475	Phasing : 0-72-144-216-288  Tolerance + - * : 0.50 (0.75)
Injection pump Pump designation : PES5P120A720LS7280 EP type number : 9 400 087 087 Governor Governor design. : RGV3001050PA1029 -3 Governer no. : 9 420 080 341	Time to cyl. no. : 5  BASIC SETTING  1st speed rpm : 700
Customer-spec. information	Rack travel in mm : 13.2013.40
Customer : MERCEDES-BENZ	Del.quantity cm3/: 24.224.4
Engine : OM 449 LA	100 s: (23.924.7)
1st version kW : 220.8 Rated speed : 2100	Spread cm3 : 0.5
TEST BENCH REQUIREMENTS	100 s: (0.9)
Test oil inlet temp. °C : 3842	+ 2nd speed rpm : 300.0 + Rack travel in mm : 5.05.3 + Del.quantity cm3/ : 1.72.3 + 100 s: (1.42.6)
Overflow valve : 1 417 413 025	+ Spread cm3 : 0.8 100 s: (1.2)
Inlet press., bar : 1.50	(B) Setting of injection pump with governor
Test nozzle holder assembly: 1 688 901 105  Opening pressure, bar: 207210	GUIDE SLEEVE TRAVEL  1st speed rpm : 1050  travel mm : 7.707.90  2nd speed rpm : 300
Orifice plate diameter mm : 0,8	travel mm : 0.501.00  3rd speed rpm : 500  travel mm : 3.003.50  4th speed rpm : 700
Test lines : 1 680 750 075	travel mm : 5.205.70 th speed rpm : 1165 travel mm : 9.209.70
Outside diameter x Wall thickness x Length mm : 8.00x2.50x1000  (A) Injection pump setting values	GUIDE SLEEVE POSITION Control-lever position Degree: -1 Speed rpm: 1120
Insp. values in parentheses Set equal delivery quant. per values	Rack travel in mm: 15.2017.80  FULL LOAD DELIV. AT FULL LOAD STOP
BEGINNING OF DELIVERY Test pressure, bar: 2527	1st version Speed rpm : 700

Aneroid pressure h: 1300 Del.quantity : 242.0...244.0 : (239.0...247.0) 1000 : 5.00 cm3 Spread 1000 : (9.00) RATED SPEED 1st version Control lever position degrees: 116...124 Testina: 1st rack travel in: 12.20 Speed rpm : 1090...1100 2nd rack travel in: 4.00 Speed rpm : 1150...1180 4th rack travel in: 1300 Speed rpm : 0.00...1.00 LOW IDLE 1 Control lever position degrees: 78...86 Testing: Speed : 100 rom Minimum rack trave: 8.00 Speed rpm : 300 Rack travel in mm : 5.10...5.30 CONSTANT REGULATION rpm : 250...400 Speed Aneroid/Altitude Compensator Test 1st version Setting rpm : 500 hPa : 1300 mm : 13.20...13.40 Speed magn Pressure Rack travel mm Measurement 1/min : 500 Speed 1st pressure hPa : -Rack travel in m: 9.50...9.80 2nd pressure hPa : 520 Rack travel in m: 10.30...10.50 3rd pressure hPa : 800 Rack travel in m: 12.00...12.20 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS

1st version Aneroid pressure h: 1300 : 1050 Speed rpm Del.quantity cm3/: 238.0...241.0 1000 s: (235.0...244.0) Spread cm3 : 8.00 1000 s: (12.0) Aneroid pressure h: -BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.20 Speed rpm : 1090...1100 Speed

STARTING FUEL DELIVERY

Speed rpm Del.quantity cm3/: 250.0...270.0 1000 s: (246.0...274.0)

Remarks:

BOSCH INJ. PUMP T	EST SPECIFICATIONS	+	5.00 5.40	
Note remarks		‡	Prestroke mm : 5.005.10 : (4.955.1	5)
Test sheet Edition Replaces Test oil	: MB : 26.02.93 :- : ISO-4113	+++++++++++++++++++++++++++++++++++++++	Rack travel in mm : 9.0012.0 Firing order : 6 2- 4-	D 1- 5- 3
Combination no.		‡	Phasing : 0-60-120-18	
Injection pump		‡	Tolerance $+ - ^{\circ} : 0.50 (0.75)$	
Pump designation	: PES6P120A720LS7181 -10	İ	Time to cyl. no. : 6	
EP type number Governor		+	BASIC SETTING	
Governor design. Governer no.		Ŧ	1st speed rpm: 1050	
Customer-spec. in	formation	‡	Rack travel in mm : 15.0015.	10
Customer	: MERCEDES-BENZ	+	Del.quantity cm3/: 26.526.7	
Engine	: 0M447LA	1	100 s: (26.227.	0)
1st version kW Rated speed	: 301.8 : 2100	1	Spread cm3: 0.5	
TEST BENCH REQUIR		Ŧ	100 s: (0.9)	
	Circin 2	Ŧ	2nd speed rpm : 300.0	
Test oil inlet temp. °C	: 3842	‡	Rack travel in mm : 5.96.1 Del.quantity cm3/ : 1.11.7	
Overflow valve	: 1 417 413 025	† †	100 s: (0.82.0) cm3 : 0.8 100 s: (1.2)	
Inlet press., bar	: 1.50	‡	(B) Setting of injection pump	
Test nezzle holde	r 4 (00 004 405	Ŧ	with governor	
assembly	: 1 688 901 105	‡	GUIDE SLEEVE TRAVEL 1st speed rpm : 300	
Opening pressure, bar	: 207210	‡	travel mm : 1.201.60 2nd speed rpm : 500	
Orifice plate diameter mm	: 0,8	† † †	travel mm : 3.003.50  3rd speed rpm : 900     travel mm : 5.606.10 4th speed rpm : 1100	
Test lines	: 1 680 750 075	-	travel mm : 7.407.90 5th speed rpm : 1210 travel mm : 9.309.80	
Outside diameter x Wall thickness x Length mm	: 8.00X2.50X1000	+	GUIDE SLEEVE POSITION Control-lever position Degree: -1	
(A) Injection pur Insp. values Set equal del per values	in parentheses ivery quant.	† † †	Speed rpm : 1140 Rack travel in mm : 15.2017. FULL LOAD DELIV. AT FULL LOAD S	
BEGINNING OF DELI Test pressure, ba		‡	1st version Speed rpm : 1050	
_				

Aneroid pressure h: 1200 : 265.0...267.0 : (262.0...270.0) Del.quantity 1000 : 5.00 Spread cm3 1000 : (9.00) RATED SPEED 1st version Control lever position degrees: 111...119 Testing: 1st rack travel in: 14.00 rpm : 1090...1100 Speed 2nd rack travel in: 4.00 Speed rpm : 1180...1210 4th rack travel in: 1300 Speed rpm : 0.00...1.50 LOW IDLE 1 Control lever position degrees: 64...72 Testing: : 100 Speed rpm Minimum rack trave: 8.00 Speed rpm : 300 Rack travel in mm : 5.90...6.10 CONSTANT REGULATION rpm : 325...475 Speed Aneroid/Altitude Compensator Test 1st version Setting Speed mqn. 1200 Pressure hPa : Rack travel mm : 15.00...15.10 Measurement  $1/\min : 600$ Speed 1st pressure hPa : Rack travel in m: 9.90...10.20
2nd pressure hPa : 500
Rack travel in m: 11.10...11.30
3rd pressure hPa : 820 Rack travel in m: 13.60 ... 13.90 START CUT-OUT 1/min: 220 (240) Speed FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 1200
Speed rpm : 700
Del.quantity cm3/: 267.5...270.5
1000 s: (264.5...273.5)
Spread cm3 : 8.00
1000 s: (12.0)
Aneroid pressure h: Speed rpm : 500
Del.quantity cm3/: 132.0...134.0
1000 s: (129.0...137.0)
Spread cm3 : 8.00
1000 s: (12.0)

# BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 14.00 Speed rpm : 1090...1100

#### STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 250.0...270.0 1000 s: (246.0...274.0)

# LOW IDLE

Speed rpm : 300 Rack travel in mm : 5.90...6.10 Del.quantity cm3/ : 11.0...17.0 1000 s: (8.0...20.0) Spread cm3 : 8.00 1000 s: (12.00)

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : MB Edition : 26.02.93 Replaces Test oil : ISO-4113 Combination no. : 9 400 087 477 Injection pump Pump designation : PES6P120A720RS3256 : 9 400 087 071 EP type number Governor Governor design. : RQV300...1300PA1057 Governer no. : 9 420 080 338 Customer-spec. information : MERCEDES-BENZ Customer Engine : OM 366 LA : 125.1 1st version kW : 2600 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 U25 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 100...120 Test nozzle holder assembly : 1 688 901 019 Opening : 207...210 pressure, bar Orifice plate diameter mm : 0,8 Test Lines : 1 680 750 075

: 8.00X2.50X1000

Phasing Tolerance + - ° BASIC SETTING 1st speed Spread Spread 1st speed travel mm 2nd speed travel mm 3rd speed travel mm 4th speed travel mm 5th speed travel mm Speed

BEGINNING OF DELIVERY

Test pressure, bar: 25...27 Prestroke mm : 3.00...3.10 : (2.95...3.15) Rack travel in mm : 20.00...21.00 Firing order : 1-5-3-6-2- 4 : 0-60-120-180-240-300 : 0.50 (0.75) Time to cyl. no. : 1 rpm: 1000 Rack travel in mm : 4.80...5.40 Del.quantity cm3/: 1.7...2.0 100 s: (1.4...2.3) cm3 : 0.2100 s: (0.3) 2nd speed rpm : 300.0 Rack travel in mm : 7.2...7.5 Del.quantity cm3/ : 1.0...1.6 100 s: (0.7...1.9) cm3 : 0.8100 s: (1.2) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 300 0.80...1.30 660 rpm 3.80...4.30 960 rpm 5.20...5.70 1357 rpm : 8.00...8.50 1492 rpm 9.80...10.30 GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1385 Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP

Outside diameter x Wall thickness

per values

(A) Injection pump setting values

Insp. values in parentheses Set equal delivery quant.

x Length mm

1st version Speed rpm: 1000 Del.quantity: 17.020.0  1000: (14.023.0) Spread cm3: 2.00 1000: (3.00)  RATED SPEED  1st version Control lever position degrees: 106114  Testing: 1st rack travel in: 9.60 Speed rpm: 13401350 2nd rack travel in: 4.00 Speed rpm: 14151445 4th rack travel in: 1550 Speed rpm: 0.001.00	1st version Aneroid pressure h: 1200 Speed rpm : 1300 Del.quantity cm3/ : 140.0142.0
LOW IDLE 1 Control lever position degrees: 7381	BREAKAWAY
Testing: Speed rpm : 100 Minimum rack trave: 9.00 Speed rpm : 300 Rack travel in mm : 7.307.50	1st version 1mm rack travel less than full load rack tr: 9.60 Speed rpm : 13401350 STARTING FUEL DELIVERY
CONSTANT REGULATION Speed rpm : 300450	Speed rpm : 100
Aneroid/Altitude Compensator Test	Del.quantity cm3/ : 90.0110.0 1000 s: (86.0114.0)
1st version Setting Speed rpm: 500 Pressure hPa: 1200 Rack travel mm: 10.7010.90  Measurement Speed 1/min: 500  1st pressure hPa: - Rack travel in m: 9.8010.10 2nd pressure hPa: 350 Rack travel in m: 10.1010.30 3rd pressure hPa: 420 Rack travel in m: 10.7010.90  START CUT-OUT  Speed 1/min: 220 (240)  FUEL DELIVERY CHARACTERISTICS	Speed rpm : 300 Rack travel in mm : 7.207.50 Del.quantity cm3/ : 10.016.0

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 25...27 Prestroke mm : 4.60...4.70 : (4.55...4.75) Rack travel in mm : 21.00...0.00 Note remarks Test sheet Edition 26.02.93 Firing order Replaces : ISO-4113 Test oil : 9 400 087 479 Combination no. : 0-60-120-180-240-300 Phasing Phasing Injection pump Pump designation Tolerance + - ° : 0.50 (0.75) : PES6P120A720LS7257 Time to cyl. no. : 6 EP type number : 9 400 087 086 Governor BASIC SETTING Governor design. : RQV300...1050PA1029 1st speed rpm: 700 Governer no. : 9 420 080 340 Rack travel in mm : 13.60...13.80 Customer-spec. information Customer : MERCEDES-BENZ Del.quantity cm3/: 24.6...24.8 Engine : OM 447 LA 100 s: (24.3...25.1) : 257.6 : 2100 1st version kW cm3 : 0.5Spread Rated speed 100 s: (0.9) TEST BENCH REQUIREMENTS 2nd speed rpm : 300.0 Rack travel in mm : 5.3...5.6 Del.quantity cm3/ : 1.1...1.7 100 s: (0.8...2.0) Test oil inlet temp. °C : 38...42 Overflow valve : 0.8 Spread cm3 : 1 417 413 025 100 s: (1.2) Inlet press., bar: 1.50 (B) Setting of injection pump with governor Test nozzle holder assembly : 1 688 901 105 GUIDE SLEEVE TRAVEL 1st speed 7.70...7.90 300 Opening travel mm : 207...210 pressure, bar 2nd speed rpm : 0.50...1.00 travel mm Orifice plate 500 3rd speed rpm 3.00...3.50 700\_ diameter mm : 0,8 travel mm 4th speed rpm 5.20...5.70 1165 travel mm Test lines : 1 680 750 075 5th speed rpm 9.20...9.70 travel mm Outside diameter x Wall thickness GUIDE SLEEVE POSITION : 8.00x2.50x1000 x Length mm Control-Lever position Degree: -1 rpm : 1120 (A) Injection pump setting values Speed Insp. values in parentheses Set equal delivery quant. Rack travel in mm : 15.20...17.80 per values FULL LOAD DELIV. AT FULL LOAD STOP BEGINNING OF DELIVERY 1st version

**GD9** 

rpm : 700 Speed Aneroid pressure h: 1000 : 246.5...248.5 : (243.5...251.5) : 5.00 Del.quantity 1000 cm3 Spread 1000 : (9.00) RATED SPEED 1st version Control lever position degrees: 117...125 Testing: 1st rack travel in: 12.70 rpm : 1090...1100 Speed 2nd rack travel in: 4.00 : 1155...1185 Speed rpm 4th rack travel in: 1300 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 78...86 Testing: Speed rom Minimum rack trave: 8.00 Speed rpm Rack travel in mm: 5.10...5.30 CONSTANT REGULATION rpm : 275...425 Speed Aneroid/Altitude Compensator Test 1st version Setting Speed rpm hPa : 1000 Pressure Rack travel mm : 13.60...13.80 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 9.70...10.00 2nd pressure hPa : 320 Rack travel in m: 10.50...10.70 3rd pressure hPa : 700 Rack travel in m: 12.70...13.00 START CUT-OUT 1/min : 220 (240) Speed FUEL DELIVERY CHARACTERISTICS

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.70 Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 225.0...245.0 1600 s: (221.0...249.0)

:

Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS : 0-60-120-180-240-300 : 0.50 (0.75) Phasing Tolerance + - ° Note remarks Time to cyl. no. : 1 : CAS 8,3 h 1 : 02.04.93 : 12.10.92 Test sheet Edition BASIC SETTING Replaces Test oil : ISO-4113 1st speed rpm: 1100 : 9 400 230 058 Combination no. Rack travel in mm : 9.60...9.70 Injection pump Del.quantity cm3/: 10.4...10.6 Pump designation: PES6A95D32OLS2647 Governor 100 s: (10.2...10.8) Governor design. : RSV400...1100A2B2172 Spread cm3 : 0.35Customer-spec. information 100 s: (0.60) Customer : CASE 2nd speed rpm : 400 Rack travel in mm : 4.80...5.00 Del.quantity cm3/: 1.8...2.2 100 s: (1.5...2.4) Spread cm3 : 0.35 100 s: (0.55) Engine : A 504 BDT TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 GUIDE SLEEVE POSITION Overflow valve Control-lever position : 9 681 273 009 Degree: -3 rpm : 800 Speed Inlet press., bar: 1.50 Rack travel in mm : 0.30...1.00 Test nozzle holder Governor spring pre-tension Click setting x :? assembly : 0 681 343 009 Opening FULL LOAD DELIV. AT FULL LOAD STOP pressure, bar : 172...175 1st version Speed rpm : 1100 , 104.5...106.5 1000 : (102.5...108.5) Test Lines : 9 681 230 706 Del.quantity Outside diameter x Wall thickness x Length mm : 3.5 Spread cm3 1000 : (6.0): 6,00x2,00x600 RATED SPEED (A) Injection pump setting values Insp. values in parentheses 1st version Set equal delivery quant. Control lever per values position degrees: 46...54 BEGINNING OF DELIVERY Testing: 1st rack travel in: 8.60 Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40 Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 10.50 Firing order : 1-5-3-6-2-4

> LOW IDLE 1 Control lever

position degrees: 26...34
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 4.40
Testing:
Speed rpm : 100
Minimum rack trave: 19.00

Speed rpm : 400
Rack travel in mm : 4.80...5.00
Rack travel in mm : 2.00
Speed rpm : 525...585

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.60...9.70
2nd speed rpm : 750
Rack travel in m: 10.25...10.35
3rd speed rpm : 600
Rack travel in m: 10.20...10.50

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 111.5...115.5 1000 s: (109.5...117.5)

### **BREAKAWAY**

1st version 1mm rack travel less than

full load rack tr: 8.60 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 140.00...150.00 1000 s: (137.0...153.0)

Remarks:

: CASE # A-182102 Start-of-delivery mark is at start of delivery of cylinder 1

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

CUM 8,3 a35 1.4.93 17.05.90 Test sheet Edition Replaces Test oil : ISO-4113

Combination no. : 9 400 230 089CP

Injection pump

Pump designation : PES6A100D320/3RS2691

EP type number : 9 410 230 025

Governor

Governor design. : RSV400...1000A0c2190

: 3915949 Cust. part no.

Customer-spec. information Customer : C.D.C.

: 6 CTA 8.3 Engine

: 171.0 1st version kW : 2000 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 017 assembly

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,6

Test Lines : 1 680 750 014

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90 : (2.75...2.95)
Rack travel in mm : 10.50

Firing order

: 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rom : 1000

Rack travel in mm : 13.20...13.30

Del.quantity cm3/: 13.1...13.3

100 s: (12.9...13.5)

cm3 : 0.3Spread

100 s: (0.6)

2nd speed rpm : 400.0 Rack travel in mm : 5.5...5.7 Del.quantity cm3/ : 1.4...1.8 100 s: (1.1...2.0) Spread cm3 : 0.3

100 s: (0.5)

GUIDE SLEEVE POSITION Control-lever position Degree: -3

rpm : 800 Rack travel in mm : 0.30...0.70

Governor spring pre-tension Click setting x :?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1000

131.0...133.0 1000 : (129.0...135.0) cm3 : 3.50 1000 : (6.00) Del.quantity

Spread

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 12.20 Speed rpm : 1050...1060 2nd rack travel in: 4.00 Speed rpm : 1130...1160 3rd rack travel in: 4.00 Speed rpm : 1135...1165 4th rack travel in: 1200 rpm : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 23...31
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.1 Testing: : 100 Speed rpm Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.50...5.70 **EREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 12.20 Speed spm : 1050...1060 Speed STARTING FUEL DELIVERY LOW IDLE Speed rpm : 400
Rack travel in mm : 5.50...5.70
Del.quantity cm3/ : 14.0...18.0
1000 s: (11.5...20.5)
Spread cm3 : 3.50 1000 s: (5.50) Remarks: Adjust stop lever to 0.5...1.0 mm before stop. Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : MAC 11.0 x4 : 26.02.93 : 3.83 Test sheet Edition Replaces : ISO-4113 Test oil Combination no. : 9 400 231 156 Injection pump Pump designation : PES6P110A720RS6006 EP type number : 9 410 231 008 Governor : RQV300/600...1050PA Governor design. 621-3K : 9 420 232 059 Governer no. Customer-spec. information : MACK TRUCKS INC. Customer : EME 6-300 Engine : 223.7 : 2100 1st version kW Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 2 417 413 011 Inlet press., bar: 1.50 Test nozzle holder assembly : 0 681 343 009 Opening : 172...175 pressure, bar : 1 680 750 015 Test lines Outside diameter x Wall thickness x Length mm : 6.00x1.50x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

Rack travel in mm : 10.50 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) BASIC SETTING rpm: 1050 1st speed Rack travel in mm : 14.00...14.00 Del.quantity cm3/: 21.3...21.5 100 s: (21.1...21.7) cm3 : 0.4Spread 100 s: (0.7) rpm : 300.02nd speed Rack travel in mm: 5.9...6.1 Del.quantity cm3/: 1.7...2.7 100 s: (1.5...2.9) cm3 : 0.5 Spread 100 s: (0.8) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed 250 rpm travel mm : 0.80...1.20 2nd speed rom : 300 1.80...2.20 travel mm 3rd speed : 720 rpm : 4.30...4.70 : 1200 travel mm 4th speed mari : 8.90...9.40 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1120 Speed Rack travel in mm: 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed : 1050 rpm : 212.5...214.5 : (210.5...216.5) Del.quantity 1000 : 4.50 Spread cm31000 RATED SPEED

BEGINNING OF DELIVERY

Prestroke mm

Test pressure, bar: 17...19

: 3.20...3.30 : (3.15...3.35)

1st version Control lever position degrees: 60...66 Testing: 1st rack travel in: 13.00 Speed rpm : 1090...1100 2nd rack travel in: 4.00 Speed : 1190...1220 rpm 4th rack travel in: 1255 : 0.00...1.00 Speed rpm LOW IDLE 1 Control lever position degrees: 17...23 Testing: Speed rpm : 250 Minimum rack trave: 9.80 Speed : 300 rpm Rack travel in mm : 7.90...8.10 Rack travel in mm : 2.00 Speed rpm : 710...770 CONSTANT REGULATION rpm : 380...600 Speed TORQUE CONTROL Dimension a mm :? Torque control curve - 1st version rpm : 1050 1st speed Rack travel in m: 14.00...14.00 2nd speed rpm : 850 Rack travel in m: 14.15...14.25 3rd speed rpm : 750 Rack travel in m: 14.65...14.75 rpm : 630 4th speed Rack travel in m: 15.20...15.30 rpm : 500 5th speed Rack travel in m: 14.60...14.80 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm Del.quantity cm3/: 210.0...213.0 1000 s: (208.0...215.0) cm3 : 6.50 1000 s: (10.0) Spread Speed rpm : 630
Del.quantity cm3/ : 235.0...238.0
1000 s: (233.0...249.0)
Spread cm3 : 6.50
1000 s: (10.0) **BREAKAWAY** 1st version G16

BOSCH INJ. PUMP TEST SPECIFICATIONS Rack travel in mm : 10.50 Firing order : 1-5-3-6-2-4 Firing order Note remarks Test sheet Edition MAC : 02.04.93 Phasing : 0-60-120-180-240-300 Replaces Test oil : ISO-4113 Tolerance + - ° : 0.50 (0.75) Combination no. : 9 400 231 157 BASIC SETTING Injection pump rpm : 10501st speed Pump designation : PES6P110A720RS6006 EP type number : 9 410 231 008 Rack travel in mm: 14.00...14.00 Governor Governor design. : RQV300/600...1050PA Del.quantity cm3/: 21.3...21.5 621-3K : 9 420 232 059 Governer no. 100 s: (21.1...21.7) Customer-spec. information Spread cm3 : 0.4: MACK TRUCKS INC. Customer 100 s: (0.7) : EME 6-300 Engine rpm : 300.02nd speed Rack travel in mm: 5.9...6.1

Del.quantity cm3/: 1.7...2.7

100 s: (1.5...2.9)

Spread cm3: 0.5

100 s: (0.8) : 223.7 : 2100 1st version kW Rated speed TEST BENCH REQUIREMENTS Test oil : 38...42 inlet temp. °C (B) Setting of injection pump with governor Overflow valve : 2 417 413 011 GUIDE SLEEVE TRAVEL rpm : 250 1st speed Inlet press., bar: 1.50 : 0.80...1.20 travel mm 2nd speed : 300 rpm Test nozzle holder travel mm : 1.80...2.20 : 720 : 4.30...4.70 : 1200 : 0 681 343 009 assembly 3rd speed rpm travel mm Opening 4th speed man pressure, bar : 172...175 : 8.90...9.40 travel mm GUIDE SLEEVE POSITION Test lines Control-lever position : 1 680 750 015 Degree: -1 rpm : 1120 Outside diameter Speed x Wall thickness Rack travel in mm: 15.20...17.80 x Length mm : 6.00x1.50x600 FULL LOAD DELIV. AT FULL LOAD STOP (A) Injection pump setting values Insp. values in parentheses 1st version 1050 Set equal delivery quant. Speed rom : 212.5...214.5 : (210.5...216.5) : 4.50 : (7.50) per values Del.quantity 1000 BEGINNING OF DELIVERY Spread cm3Test pressure, bar: 17...19 1000 : 3.20...3.30 : (3.15...3.35) Prestroke mm RATED SPEED

1st version Control lever position degrees: 60...66 Testing: 1st rack travel in: 13.00 Speed rpm: 1090...1100 2nd rack travel in: 4.00 : 1190...1220 Speed rpm 4th rack travel in: 1255 Speed rpm : 0.00...1.00 LOW IDLE 1 Control lever position degrees: 17...23 Testing: Speed rpm : 250 Minimum rack trave: 9.80 Speed rpm : 300
Rack travel in mm : 7.90...8.10
Rack travel in mm : 2.00
Speed rpm : 710...770 CONSTANT REGULATION rpm : 380...600 Speed TORQUE CONTROL Dimension a mm Torque control curve - 1st version rpm : 1050 1st speed Rack travel in m: 14.00...14.00 nd speed rpm : 850 Rack travel in m: 14.15...14.25 2nd speed 3rd speed rom : 750 Rack travel in m: 14.65...14.75 : 630 4th speed COM Rack travel in m: 15.20...15.30 th speed rpm : 500 th speed rpm : 500 Rack travel in m: 14.60...14.80 5th speed FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm Del.quantity cm3/: 210.0...213.0 1000 s: (208.0...215.0) cm3 : 6.50 1000 s: (10.0) Spread Speed rpm : 630
Del.quantity cm3/: 235.0...238.0
1000 s: (233.0...240.0)
Spread cm3 : 6.50
1000 s: (10.0) **BREAKAWAY** 1st version G18

1mm rack travel less than full load rack tr: 13.00 : 1090...1100 Speed non STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/: 110.0...170.0 1000 s: (100.0...180.0) Rack travel in mm: 12.70...12.90 LOW IDLE Speed Lbw Rack travel in mm: 5.90...5.10
Del.quantity cm3/: 17.0...27.0
1000 s: (-)
Spread cm3: 5.50 1000 s: (8,00) Remarks: : MACK #313 GC 5151 P9 See VDT-I-MAC 002 PLE dimension = 0.740'' - 0.820''

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

: MWM 5,9 a11 : 05.03.93 : 10.91 Test sheet Edition Replaces

: ISO-4113 Test oil

Combination no. : 9 407 083 279

Injection pump

Pump designation : PES6A80D320RS1271 EP type number : 9 400 083 058

Governor

: RSV350...1400A2C2179 Governor design.

: 9 420 083 281 Governer no.

Customer spec. information Customer : MWM

Engine : 0229-6

1st version kW : 100.0 Rated speed : 2800

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 0 681 343 009 assembly

Opening

pressure, bar : 172...175

Test lines : 1 680 750 003

Outside diameter x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

: 2.20...2.30 : (2.15...2.35) Prestroke mm

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Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

Phasina : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 9.00...12.00 & maximum rack tra: 21.00

Difference CS : 4.00...5.00

BASIC SETTING

1st speed rpm: 1400

Rack travel in mm : 10.00...10.10

Del.quantity cm3/: 5.8...5.9

100 s: (5.7...6.1)

Spread cm3 : 0.2

100 s: (0.4)

2nd speed rpm : 350.0
Rack travel in mm : 7.1...7.3
Del.quantity cm3/: 0.9...1.2
100 s: (0.7...1.3)
Spread cm3 : 0.2

100 s: (0.3)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3 rpm : 800 Speed

Rack travel in mm : 0.30...1.00

Governor spring pre-tension Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed : 1400 LDW

: 58.5...59.5 : (57.0...61.0) : 2.50 : (4.00) Del.quantity 1000

Spread cm31000

RATED SPEED

1st version

Control lever position degrees: 101...109 Testing: 1st rack trave! in: 9.00 Speed rpm : 1440...1450 2nd rack travel in: 4.00 Speed rpm : 1480...1510 4th rack travel in: 1650 Speed rpm: 0.30...1.70 LOW IDLE 1 Control lever position degrees: 68...76
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 6.7 Testina: : 100 Speed rpm Minimum rack trave: 19.00 Speed rpm : 350
Rack travel in mm : 7.10...7.30
Rack travel in mm : 2.00 Speed rpm : 620...680 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1400 Rack travel in m: 10.00...10.10 2nd speed rpm : 500 Rack travel in m: 10.70...10.80 d speed rpm : 800 Rack travel in m: 10.40...10.60 3rd speed FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 500 Del.quantity cm3/ : 50.5...52.5 1000 s: (48.5...54.5) Speed rpm: 800 Del.quantity cm3/: 53.0...55.0 1000 s: (51.0...57.0) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 9.00 rpm : 1440...1450 Speed STARTING FUEL DELIVERY Speed rpm : 100 Rack travel in mm : 19.00...21.00

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LOW IDLE

Speed rpm : 350
Rack travel in mm : 7.10...7.30
Del.quantity cm3/: 9.0...12.0
1000 s: (7.5...13.5)
Spread cm3 : 2.00
1000 s: (3.50)

Remarks:

Rack travel in mm : 9.00...12.00 Firing order : 1-3-4-2 BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : MM 3,9 b 5 : 05.03.93 Test sheet Edition Phasing : 0-90-180-270 Replaces : 10.91 Test oil : ISO-4113 Tolerance + - " : 0.50 (0.75) Combination no. : 9 407 083 296 Time to cyl. no. : 1 Injection pump BEGINNING OF DELIVERY DIFFERENCE Pump designation : PES4A80D320RS1282 betw. rack trav. m: 9.00...12.00 & maximum rack tra: 21.00 Difference ° CS : 4.00...5.00 EP type number : 9 400 083 056 Governor Governor design. : RSV350...1500A2c2122 : 9 420 083 286 Governer no. BASIC SETTING Customer-spec. information 1st speed rpm : 1500 Customer : MWM Rack travel in mm : 10.20...10.30 Engine : D 229-4 Del.quantity cm3/: 6.0...6.1 1st version kW : 64.0 : 3000 100 s: (5.8...6.2) Rated speed TEST BENCH REQUIREMENTS Spread cm3 : 0.2Test oil 100 s: (0.4) inlet temp. °C : 38...42 2nd speed rpm : 350.0 Rack travel in mm : 6.9..7.1 Del.quantity cm3/ : 0.7..1.0 100 s: (0.6..1.2) Overflow valve : 1 419 992 198 cm3 : 0.2 100 s: (0.3) Inlet press., bar: 1.50 Spread Test nozzle holder : 0 681 343 009 assembly GUIDE SLEEVE POSITION Control-lever position Opening Degree: -3 rpm : 800 pressure, bar : 172...175 Speed Rack travel in mm : 0.30...1.00 Test lines : 1 680 750 003 Governor spring pre-tension Click setting x : 6.50 Outside diameter x Wall thickness FULL LOAD DELIV. AT FULL LOAD STOP x Length mm : 6.00x2.00x600 1st version (A) Injection pump setting values Insp. values in parentheses Speed rpm : 1500 : 60.0...61.0 : (58.5...62.5) : 2.50 Del.quantity Set equal delivery quant. 1000 per values Spread cm3 1000 : (4.00) BEGINNING OF DELIVERY Test pressure, bar: 25...27 RATED SPEED : 2.20...2.30 : (2.15...2.35) Prestroke mm 1st version

Control lever position degrees: 117...125 Testing: 1st rack travel in: 9.20 Speed rpm: 1540...1550 2nd rack travel in: 4.00 Speed rpm: 1610...1640 4th rack travel in: 1800 Speed rpm: 0.30...1.70 LOW IDLE 1 Control lever position degrees: 78...86 Setting point w/out bumper spring Speed rpm : 350 Rack travel in mm : 6.5 Testing: Speed rpm : 100 speed rpm : 350
Rack travel in mm : 6.90...7.10
Rack travel in mm : 2.00
Speed rpm : 440 Minimum rack trave: 19.00 TORQUE CONTROL Torque control curve - 1st version
1st speed rpm : 1500
Rack travel in m: 10.20...10.30
2nd speed rpm : 500
Rack travel in m: 11.20...11.30
3rd speed rpm : 800
Rack travel in m: 11.00...11.30
4th speed rpm : 1100
Rack travel in m: 10.60...10.90 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 500 Del.quantity cm3/ : 55.0...57.0 1000 s: (53.0...59.0) Speed rpm: 800
Del.quantity cm3/: 58.5...61.5
1000 s: (56.5...63.5)
Speed rpm: 1100
Del.quantity cm3/: 60.5...62.5
1000 s: (58.5...64.5) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 9.20 Speed rpm : 1540...1550 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 6.90...7.10
Del.quantity cm3/ : 7.5...10.5
1000 s: (6.0...12.0)
Spread cm3 : 2.00
1000 s: (3.50)

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

: CUM 3.9 P43 Test scheet : 08.04.93 : 14.04.92 Edition replaces Calibrating oil : ISO-4113

: VE4/12F110GR378-7 : 0 460 424 074 Injection pump Type number

Customer Part-No. :

Customer-specific information

Customer

Engine

: 4 BT-390

TEST BENCH REQUIREMENTS

Overflow restricti: 1 463 456 303

Calibrating oil

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly

: 1 688 901 027

Opening

bar: 250.00...253.00 Pressure

Perforated-plate

diameter

mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840 x Length

Start of delivery

mm: 0.3 Prestroke

(from BDC): +-0.02(0.04)

Start of delivery block Piston stroke mm: 1.8 mm: +-0.02(0.06)

Outlet. : A

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 900 Speed

Setting value mm: 2.30...2.70

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 900

Setting value bar: 4.10...4.70

Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

1/min: 750 Speed

Del. quancity cm3/ 1000s.: 63.50...64.50

Shutoff

electromagnet Volt: 12 Dispersion cm3/: 4.0 1000S.: (4.5)

Low-idle speed regulation

1/min: 500 Speed

Del. quantity cm3/ 10005:: 6.00...12.00

Shutoff electromagnet Volt: 12 Del. quantity cm3/: 5.5 1000S.: (7.0)

Full-load speed regulation

1/min: 1170 Speed

Del. quantity cm3/ 1000s.: 31.50...38.50

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 70.00...120.00 mind 10008.: 70.00

Shutoff

electromagnet Volt: 12

Inspection pump test specifications Test specifications in parentheses

Timing device characteristic:

2nd speed

1/min: 1100 mm: 3.10...3.90 mm: (2.80...4.20) TD travel

Shutoff

electromagnet Volt: 12 3rd speed 1/min: 900

TD travel mm:	2.302.70	t	Shutoff
Shutoff	(1.803.20)	‡	electromagnet Volt: 12 Del. quantity_cm3/: 60.5063.50
electromagnet Volt: 4th speed 1/min:	12	+	1000s.: (59.0065.00)
TD travel mm:	0.701.50		6th speed 1/min: 900 Shutoff
nn:	(0.401.80)	+	electromagnet Volt: 12
Shutoff electromagnet Volt:	12		Del. quantity cm3/: 60.8063.80 1000\$:: (58.8065.80)
_	4	+	7th speed 1/min: 750
Supply-pump pressure	characteristic:		Shutoff electromagnet Volt: 12
1st speed 1/min:	500	-	Del. quantity cm3/: 63.5064.50
Supply-pump pressure bar:	2.403.00	t	1000S:: (61.0067.00) 8th speed 1/min: 500
Shutoff		-	Shutoff
electromagnet Volt: 2nd speed 1/min:	12 900	t	electromagnet Volt: 12
Supply-pump	-	F	Del. quantity cm3/: 61.0069.00 1000S.: (59.0071.00)
pressure bar: Shutoff	4.104.70	<b>†</b>	Mech. shutoff:
electromagnet Volt:	12	F	Mech. Abstelling:
3rd speed 1/min:	1100	r	•
Supply-pump pressure bar:	4.905.50		1st speed  1/min: 1100 Del. guantity cm3/: 0.003.00
Shutoff	12	-	Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)
electromagnet Volt:	12	Ţ	Shutoff electromagnet volt: 12
Overlow quantity at	overflow valve:	+	_
1st speed 1/min:	500		Electr. shutoff:
Shutoff	_	}	1st speed 1/min: 500
electromagnet Volt:	41.7083.40		Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)
quantity cm3/10s:	(26.7098.40)	-	Shutoff
2nd speed 1/min: Shutoff	1100	Ľ	electromagnet volt: -
electromagnet Volt:	12	-	Idle delivery:
Overflow :: quantity cm3/10s:	55.60139.00 (40.60 154.00)	t	1st speed 1/min: 500
	4	-	Shutoff
Delivery-quant. and I	breakaway char.:		electromagnet Volt: 12 Del. quantity cm3/: 6.0012.00
		-	1000s.: (4.0014.00)
2nd speed 1/min: Shutoff	1260		Dispersion cm3/: 5.5 1000s.: (7.0)
electromagnet Volt:	12	Ę.	2nd speed 1/min: 570
Del. quantity cm3/: 1	0.003.00 (0.003.00)	-	Shutoff
3rd speed 1/min:	1190	-	electromagnet Volt: 12 Del. quantity_cm3/: 0.004.00
Shutoff	12	}	1000s.: (0.004.00)
electromagnet Volt: Del. quantity cm3/:	16.0040.00		Automatic starting fuel delivery:
1000\$.:	(10.0040.00)	-	
4th speed 1/min: Shutoff	11/0	-	1st speed 1/min: 130 Shutoff
electromagnet Voit:		-	electromagnet Volt: 12
Del. quantity cm3/: 1000s.:	31.5038.50 (29.0041.00)		Del. quantity cm3/: 70.00130.00 1000s.: (70.00130.00)
5th speed 1/min:	1100	-	1000011 (10,001,1100.007

2nd speed Shutoff 1/min: 240

electromagnet Volt: 12 Del. quantity cm3/: 30.00...70.00 1000s.: (30.00...70.00)

4th speed Shutoff 1/min: 100

electromagnet Volt: 12 Del. quantity cm3/: 70.00...120.00 1000S.: (70.00...120.00)

## Shutoff electromagnet:

Cut-in min voltage Rated voltage : 10.0 : 12.0

## Mounting and assembly dimensions:

Designation

mm: -

K KF MS mm: K-OT mm: 1.2...1.6 mm: 3.2

SVS max.

Remarks:

: C.D.C. # 391 7528

Speed 1/min: 1500 Charge press hPa: 1000 Setting value bar: 5.70...6.30 BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column KSB/AFB Test scheet Edition : FIA 1.9 K valve Volt: 12 : 08.04.93 : 05.12.91 Shutoff replaces electromagnet Volt: 12 Calibrating oil : 1SO 4113 Full-load del. with charge press.: Injection pump : VE4/9F2100R466 Type number : 0 460 494 304 Speed 1/min: 1500 Charge press. hPa: 1000 Del. quantity cm3/ 1000s.: 52.00...53.00 Customer-specific information : FIAT - TIPO / TEMPRA Customer KSB/AFB : M710 Engine valve Volt: 12 Shutoff electromagnet Volt: 12 Dispersion cm3/: 2.5 1000S.: (2.5) TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 344 Calibrating-oil Full-load del. w/out charge press.: return temp. with thermometer : 40.00...48.00 1/min: 600 Del. quantity cm3/ 1000s.: 39.50...40.50 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 KSB/AFB Volt: 12 valve Calibrating nozzle-holder Shutoff : 1 688 901 022 assembly electromagnet Volt: 12 Opening. Low-idle speed regulation bar: 130.00...133.00 Pressure 1/min: 450 Charge press hPa: -Del. quantity cm3/ 1000s.: 11.00...15.00 Test inj. tubing : 1 680 750 073 Outside diameter : 6.00 KSB/AFB x Wall thickness : 2.00 Volt: 12 valve mm: 450 Shutoff x Length electromagnet Volt: 12 Del. quantity cm3/: 2.5 1000S.: (2.5) Start of delivery Prestroke mm: -(from BDC): -Residual-Delivery Setting Injection-pump setting values Test specifications in parentheses Speed 1/min: 700 Charge press. hPa: ~ Timing-device travel Del. quantity cm3/ 1000s.: 4.00...6.00 Charge press. hPa: 1000 Setting value mm: 6.00. AFB/AFB KSB/AFB valve Volt: 12 Shutoff mm: 6.00...6.40 electromagnet Volt: 12 Volt: 12 valve Shutoff Full-load speed regulation electromagnet Volt: 12 1/min: 2300 Speed Charge press hPa: 1000 Supply-pump pressure **G26** 

Del. quantity cm3/	+ Shutoff
1000s.: 35.0041.00	+ electromagnet Volt: 12
KSB/AFB	+ 3rd speed 1/min: 800
valve Volt: 12	+ Charge press hPa: 1000
Shutoff	+ TD travel mm: 1.602.40
electromagnet Volt: 12	+ (1.302.70)
Charle	+ KSB/AFB
Start:	+ valve Volt: 12
Samed Alvier, 100	+ Shutoff
Speed 1/min: 100	+ electromagnet Volt: 12
Charge press hPa: -	4th speed 1/min: 1500
Del. quantity cm3/: - mind 1000s.: 50.0	+ Charge press hPa: 1000
KSB/AFB	TD travel mm: 6.006.40
Valve Volt: 12	+ KSB/AFB mm: (5.606.80)
Shutoff	+ valve Volt: 12
electromagnet Volt: 12	F Shutoff
etettrunghet vott. 12	
Load-dependent start of delivery:	electromagnet Volt: 12
Inj.—qty.dif.measurement:	+ 5th speed 1/min: 2100 + Charge press. hPa: 1000
inj. qty.un measurement.	
Speed 1/min: 1500	TD travel mm: 8.609.40 mm: (8.309.70)
Charge press hPa: -	+ KSB/AFB
Inj.—qty. cm3/	T valve Volt: 12
difference 1000S.: 5.007.00 #	Shutoff
KSB/AFB	electromagnet Volt: 12
valve Volt: 12	T ecectroniagnet vott: 12
Shutoff	Supply-pump pressure characteristic:
electromagnet Volt: 12	T adplicy bould by easing character (2010).
SP pressdif.measurement	1st speed 1/min: 800
pompa di mandata (FP)	Charge press. hPa: 1000
1.Speed 1/min: 1500	+ Supply-pump
Charge press hPa: -	+ pressure bar: 3.704.30
Supply pump	L KSB/AFB
pressure	T valve Volt: 12
difference bar: 0.100.30 #	+ Shutoff
KSB/AFB	+ electromagnet Volt: 12
valve Volt: 12	+ 2nd speed 1/min: 1500
Shutoff	+ Charge press. hPa: 1000
electromagnet Volt: 12	+ Supply-pump
o to to to to to to to to to to to to to	+ pressure bar: 5.706.30
Inspection-pump test specifications	+ KSB/AFB
Test specifications in parentheses	+ valve Volt: 12
The second secon	+ Shutoff
Timing-device characteristic:	+ electromagnet Volt: 12
	+ 3rd speed 1/min: 2100
1st speed 1/min: 500	+ Charge press. hPa: 1000
Charge press hPa: 1000	+ Supply-pump
TD travel mm: 3.905.50 A	+ pressure bar: 7.30,7.90
mm: (3.206.20)	+ KSB/AFB
KSB/AFB	+ valve Volt: 12
valve Volt: 12	+ Shutoff
valve Volt: 12 electromagnet Volt: 12	+ electromagnet Volt: 12
2nd speed 1/min: 1000	+
Charge press hPa: 1000	+ Overlow quantity at overflow valve:
TD travel mm: 3.506.50 B	
nm: -	+ 1st speed 1/min: 800
KSB/AFB	+ Charge press. hPa: 1000
valve Volt: 12	+ KSB/AFB
	+ valve Volt: 12
	•

Shutoff	+	KSB/AFB
electromagnet Volt:	12 +	valve Volt: 12
Overflow :	75.00119.00	Shutoff
guantity cm3/10s: 2nd speed 1/min:	(60.00134.00)	electromagnet Volt: 12
and speed 1/min:	2100 +	Del. quantity cm3/: 54.0057.00
Charge press. hPa:	7000 +	1000s.: -
KSB/ĀFB valve Volt:	12	7th speed 1/min: 800
valve Volt: Shutoff	12	Charge press. hPa: -
	12	KSB/ĀFB valve Volt: 12
electromagnet Volt: Overflow :	97.00180.50 I	Shutoff
quantity cm3/10s:	(82 00 195 50)	electromagnet Volt: 12
qualife (c) (3) (5).	1	electromagnet Volt: 12 Del. quantity cm3/: 38.7040.70
Delivery-quant. and	breakaway char.:	1000s.: (37.2042.20)
out to y quarter and	or carraina, criai :	10000:: (3)::20:::42:20
	1	Mech. shutoff:
1nd speed 1/min:	800*	TO SHIT SHOULD IT
Charge air pressure		Electr. shutoff:
point hPa:	400 +	
LDA-stroke mm:	5.2	1st speed 1/min: 450
KSB/AFB	+	Charge press. hPa: -
valve Volt:	12 +	Del. quantity cm3/: 0.003.00
Shutoff	+	10005.: -
electromagnet Volt:	12 +	Shutoff
Del. quantity_cm3/:	48.5049.50	electromagnet volt: -
10005.:	(46.5051.50)	KSB/AFB
2nd speed 1/min:		valve Volt: 12
Charge press. hPa:	1000	
KSB/ĀFB	<u>.</u> +	Damper set qty.:
valve Volt:	12 +	• • • • • • • • • • • • • • • • • • • •
Shutoff	+	LFG-setting:
Shutoff electromagnet Volt:	12	LFG-setting: solidale con carcassa:
Shutoff electromagnet Volt: Del. quantity cm3/:	12 17.0025.00	LFG-setting:
Shutoff electromagnet Volt: Del. quantity cm3/:	12 17.0025.00	LFG-setting: solidale con carcassa: Idle delivery:
Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 3rd speed 1/min:	12 17.0025.00 (16.0026.00)	LFG-setting: solidale con carcassa: Idle delivery: 1st speed  1/min: 450
Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 3rd speed 1/min: Charge press. hPa:	12 17.0025.00 (16.0026.00)	LFG-setting: solidale con carcassa: Idle delivery: 1st speed  1/min: 450 KSB/AFB
Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 3rd speed 1/min: Charge press. hPa: KSB/AFB	12 17.0025.00 (16.0026.00) 2300 1000	LFG-setting: solidale con carcassa: Idle delivery: 1st speed  1/min: 450 KSB/AFB valve  Volt: 12
Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt:	12 17.0025.00 (16.0026.00) 2300 1000	LFG-setting: solidale con carcassa: Idle delivery: 1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff	12 17.0025.00 (16.0026.00) 2300 1000	LFG-setting: solidale con carcassa: Idle delivery: 1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000s.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt:	12 17.0025.00 (16.0026.00) 2300 1000	LFG-setting: solidale con carcassa: Idle delivery: 1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/:	12 17.0025.00 (16.0026.00) 2300 1000 12	LFG-setting: solidale con carcassa: Idle delivery: 1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 12 35.0041.00 (33.0043.00)	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 12 35.0041.00 (33.0043.00) 2100	LFG-setting: solidale con carcassa: Idle delivery: 1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 12 35.0041.00 (33.0043.00) 2100	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 12 35.0041.00 (33.0043.00) 2100	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB	12 17.0025.00 (16.0026.00) 2300 1000 12 12 12 35.0041.00 (33.0043.00) 2100	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 12 35.0041.00 (33.0043.00) 2100 1200	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 12 35.0041.00 (33.0043.00) 2100 1000	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 135.0041.00 (33.0043.00) 2100 1000 12 12 147.6050.60 (46.6051.60)	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 12 35.0041.00 (33.0043.00) 2100 1000 12 12 12 47.6050.60 (46.6051.60)	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Shutoff electromagnet Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min: Charge press. hPa:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 12 35.0041.00 (33.0043.00) 2100 1000 12 12 12 47.6050.60 (46.6051.60)	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min: Charge press. hPa: KSB/AFB	12 17.0025.00 (16.0026.00) 2300 1000 12 12 135.0041.00 (33.0043.00) 2100 1000 12 12 12 47.6050.60 (46.6051.60) 1500 1000	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Sthypeed 1/min: Charge press. hPa: KSB/AFB valve Volt:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 135.0041.00 (33.0043.00) 2100 1000 12 12 12 47.6050.60 (46.6051.60) 1500 1000	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff	12 17.0025.00 (16.0026.00) 2300 1000 12 12 13 35.0041.00 (33.0043.00) 2100 1000 12 12 12 47.6050.60 (46.6051.60) 1500 1000	LFG-setting: solidale con carcassa: Idle delivery:  1st speed  1/min: 450 KSB/AFB valve
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff	12 17.0025.00 (16.0026.00) 2300 1000 12 12 13 35.0041.00 (33.0043.00) 2100 1000 12 12 12 47.6050.60 (46.6051.60) 1500 1000	LFG-setting: solidale con carcassa: Idle delivery:  1st speed 1/min: 450 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 11.0015.00 1000S.: (9.0017.00)  Residual:  1.Rotacao 1/min: 700 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 4.006.00 1000S.: (3.007.00)  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1500
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Del. quantity cm3/: Sthutoff electromagnet Volt: Shutoff electromagnet Volt: Shutoff electromagnet Volt: Del. quantity cm3/:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 13 35.0041.00 (33.0043.00) 2100 1000 12 12 12 47.6050.60 (46.6051.60) 1500 1000 12	LFG-setting: solidale con carcassa: Idle delivery:  1st speed 1/min: 450 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 11.0015.00 1000S.: (9.0017.00)  Residual:  1.Rotacao 1/min: 700 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 4.006.00 1000S.: (3.007.00)  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1500 Charge press. hPa: -
Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 3rd speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 4th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Shutoff electromagnet Volt: Del. quantity cm3/: 1000S.: 5th speed 1/min: Charge press. hPa: KSB/AFB valve Volt: Del. quantity cm3/: Sthutoff electromagnet Volt: Shutoff electromagnet Volt: Shutoff electromagnet Volt: Del. quantity cm3/:	12 17.0025.00 (16.0026.00) 2300 1000 12 12 13 35.0041.00 (33.0043.00) 2100 1000 12 12 12 47.6050.60 (46.6051.60) 1500 1000 12 12 12 13 15 15 15 15 15 15 15 15 15 15	LFG-setting: solidale con carcassa: Idle delivery:  1st speed 1/min: 450 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 11.0015.00 1000S.: (9.0017.00)  Residual:  1.Rotacao 1/min: 700 KSB/AFB valve Volt: 12 Shutoff electromagnet Volt: 12 Shutoff electromagnet Volt: 12 Del. quantity cm3/: 4.006.00 1000S.: (3.007.00)  Load-dependent start of delivery: Injqty.dif.measurement:  1st speed 1/min: 1500

```
KSB/AFB
                 Volt: 12
valve
Shutoff
electromagnet Volt: 12
TD-travel dif.measurement:
correttore anticipo injezione (SV):
1st speed 1/min: 1500
Charge press. hPa: -
                     : 0.80...1.10 "
TD-travel
difference
                   mm: -
KSB/AFB
valve
                 Volt: 12
Shutoff
electromagnet Volt: 12
Automatic starting fuel delivery:
1st speed
               1/min: 220
Charge press. hPa: - KSB/AFB
valve
                 Volt: 12
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 52.00...78.00
1000s.: -
2nd speed
               1/min: 300
Charge press. hPa: - KSB/AFB
                 Volt: 12
valve
Shutoff
electromagnet Volt: 12
Del. quantity cm3/: 35.50...45.50
1000s.: -
Shutoff electromagnet:
Cut-in
                     : 10.0
min voltage
Rated voltage
                     : 12.0
Mounting and assembly dimensions:
Designation
                   mm: 3.2...3.4
mm: 5.2...5.6
mm: 1.0...1.4
K
KF
MS
LDA stroke
                   mm: 5.2
Operate control lever after each
manifold-pressure compensator pressure
change.
* Correction at adjusting nut
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition 05.03.93 Replaces Test oil : ISO-4113 Phasing Combination no. : 0 401 876 795 Tolerance + - ° Injection pump Pump designation : PE6P110A320LS3835-2 Time to cyl. no. EP type number : 0 411 816 761 Governor BASIC SETTING Governor design. : RSV350...1000P0A827 1st speed Governer no. : 0 421 833 404 Customer-spec. information : MERCEDES-BENZ Customer Engine : OM 441 : 129.0 : 2000 1st version kW Spread Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve cm3Spread : 1 417 413 025 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 100...120 Test nozzle holder : 0 681 343 009 assembly Opening : 172...175 pressure, bar 1st version Test lines : 1 680 750 015 Speed Del.quantity Outside diameter x Wall thickness Spread cm3 : 6.00x1.50x600 1000 x Length mm (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever

Prestroke mm : 4.00...4.10 : (3.95...4.15) Rack travel in mm : 9.00...12.00 Firing order : 6-3-5-2-4-1 : 0-60-120-180-240-300 : 0.50 (0.75) rpm: 980 Rack travel in mm : 11.40...11.50 Del.quantity cm3/: 11.0...11.2 100 s: (10.7...11.4) cm3 : 0.4100 s: (0.8) 2nd speed rpm : 350.0 Rack travel in mm : 7.7...8.3 Del.quantity cm3/ : 1.2...1.8 100 s: (0.9...2.0) : 0.4 100 s: (0.7) **GUIDE SLEEVE POSITION** Control-Lever position Degree: -3 rpm : 800 Rack travel in mm : 0.30...0.70 Sovernor spring pre-tension Click setting x :? FULL LOAD DELIV. AT FULL LOAD STOP 980 man , i 110.0...112.0 1000 : (107.5...114.5) : 4.00 : (8.00) position degrees: 94...102 Testing:

H<sub>0</sub>2

BEGINNING OF DELIVERY Test pressure, bar: 25...27

1st rack travel in: 10.40 rpm : 1030...1040 Speed 2nd rack travel in: 4.00 Speed rpm: 1100...1118 4th rack travel in: 1300 Speed rpm: 0.30...1.40 LOW IDLE 1 Control lever position degrees: 73...81 Setting point w/out bumper spring Speed rpm : 350 Speed rpm : 350 Rack travel in mm : 8.0 Testing: Speed rpm : 100 Minimum rack trave: 19.50 Speed rpm : 350 Rack travel in mm : 7.90...8.10 Rack travel in mm : 2.00 Speed : 420...480 rpm SET IDLE AUXILIARY SPRING Rack travel in mm : 2.00 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 980 Rack travel in m: 11.40...11.50 2nd speed rpm : 750 Rack travel in m: 11.40...11.50 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 750
Del.quantity cm3/: 98.0...102.0
1000 s: (95.0...105.0) Spread cm3 : 6.00 1000 s: (8.00) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 10.40 Speed rpm : 1030...1040 STARTING FUEL DELIVERY Speed : 100 rpm Del.quantity cm3/: 140.0...160.0 1000 s: (136.0...164.0) Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet

26.02.93 02.93 Edition Replaces : ISO-4113 Test oil

Combination no. : 0 401 876 797

Injection bump

Pump designation : PE6P120A320LS3815-13

: 0 411 826 782 EP type number

Governor

Governor design. : RSV350...1000P0A827

: 0 421 833 402 Governer no.

Customer-spec. information

: MERCEDES-BENZ Customer

: OM441A Engine

1st version kW : 177.0 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 105...125

Test nozzle holder

: 1 688 901 019 assembly

Openina

pressure, bar : 207...210

Orifice plate

diameter mm : 0,8

Test lines : 1 680 750 075

Outside diameter x Wall thickness

x Length mm : 8.00x2.50x1000

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 3.60...3.70 : (3.55...3.75) Rack travel in mm : 20.00...21.00 Firing order : 6-3-5-2-

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 6

BASIC SETTING

1st speed rpm: 980

Rack travel in mm : 11.00...11.10

Del.quantity cm3/: 17.1...17.3

100 s: (16.8...17.6)

Spread cm3 : 0.5

100 s: (0.9)

rpm : 350.02nd speed

Rack travel in mm : 4.7...5.3 Del.quantity cm3/ : 1.4...2.2

100 s: (1.1...2.5)

cm3 : 0.8 Spread

100 s: (1.2)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

rpm : 800 Speed

Rack travel in mm : 0.30...0.70

Governor spring pre-tension Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed : 980 rpm

: 171.0...173.0 Del.quantity

1000 : (168.0...176.0)

: 5.00 Spread cm3

1000 : (9.00)

RATED SPEED

1st version

```
Control lever
 position degrees: 95...103
Testing:
1st rack travel in: 10.00
                 rpm : 1030...1040
   Speed
2nd rack travel in: 4.00
Speed rpm : 1100...1118
4th rack travel in: 1250
Speed rpm : 0.30...1.40
LOW IDLE 1
Control lever
position degrees: 72...80
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.0
Testing:
Speed rpm: 100
Minimum rack trave: 19.50
Speed rpm: 350
Rack travel in mm: 4.90...5.10
Rack travel in mm: 2.00
Speed rpm: 380...440
SET IDLE AUXILIARY SPRING
Rack travel in mm : 2.00
FUEL DELIVERY CHARACTERISTICS
1st version
BREAKAWAY
1st version
1mm rack travel less than
 full load rack tr: 10.00
                       : 1030...1040
Speed
                rpm
STARTING FUEL DELIVERY
Speed rpm : 100
Del.quantity cm3/ : 190.0...210.0
1000_s: (186.0.__214.0)
```

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : LIE : 26.02.93 : 04.92 Test sheet Edition Replaces : ISO-4113 Test oil Combination no. : 0 401 878 714 Injection pump Pump designation: PE8P110A320LS3853 EP type number : D 411 818 720 Governor Governor design. : RSV400...900P1A544 Governer no. : 0 421 833 326 Customer-spec. information Customer : LIEBHERR Engine : D 9308 T : 260.0 : 1800 1st version kW Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder assembly : 0 681 343 009 Opening pressure, bar : 172...175 Test lines : 1 680 750 015 Outside diameter x Wall thickness

: 6.00x1.50x600 x Lerigth min (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY

Test pressure, bar: 25...27 Prestroke mm : 3.80...3.90 : (3.75...3.95)
Rack travel in mm : 9.00...12.00

: 1- 8- 7- 2- 6- 3-5- 4 Firing order

Phasing : 0-45-90-135-180-225-

270–315 : 0.50 (0.75) Tolerance + - °

Time to cyl. no.

BASIC SETTING

1st speed rpm: 890

Rack travel in mm : 13.80...13.90

Del.guantity cm3/: 17.5...17.8

100 s: (17.2...18.0)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 400.0 Rack travel in mm : 5.8...6.0 Del.quantity cm3/ : 1.3...1.8 100 s: (1.0...2.0)

cm3 : 0.4 100 s: (0.7)

GUIDE SLEEVE POSITION Control-lever position Degree: -3

rpm : 800 Speed Rack travel in mm : 0.30...0.70

Governor spring pre-tension Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm Del.quantity : 175.0...178.0 1000 : (172.5...180.5)

: 4.00 Spread cm3 1000

RATED SPEED

1st version Control lever

position degrees: 87...95

Testing:

1st rack travel in: 12.80 Speed rpm : 930...940 2nd rack travel in: 4.00

Speed rpm: 945975  3rd rack travel in: 4.00  Speed rpm: 950980  4th rack travel in: 1120  Speed rpm: 0.301.40
LOW IDLE 1 Control lever position degrees: 6472 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.4 Speed rpm : 400 Rack travel in mm : 5.806.00 Rack travel in mm : 2.00 Speed rpm : 450510
TORQUE CONTROL  Torque control curve - 1st version  1st speed rpm : 890 Rack travel in m: 13.8013.90  2nd speed rpm : 500 Rack travel in m: 13.8014.00  3rd speed rpm : 420 Rack travel in m: 15.0015.60
FUEL DELIVERY CHARACTERISTICS
1st version Speed rpm : 500 Del.quantity cm3/ : 176.0184.0 1000 s: (173.0187.0)
BREAKAWAY
1st version 1mm rack travel less than
full load rack tr: 12.80 Speed rpm : 930940
STARTING FUEL DELIVERY
Speed rpm : 100 Dei.quantity cm5/ : 150.0170.0 1000 s: (146.0174.0)
LOW IDLE
Speed rpm : 400 Rack travel in mm : 5.806.00 Del.quantity cm3/ : 13.018.0 1000 s: (10.520.5) Spread cm3 : 4.50 1000 s: (7.50)
Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet Edition : 22.01.93 Replaces : ISO-4113 Test oil

Combination no. : 0 402 036 747

Injection bump

Pump designation : PES6P110A120RS3296

EP type number : 0 412 016 738

Governor

Governor design. : RQV400...1250PA1014

: 0 421 815 291 Governor no.

Customer-spec. information : CUMMINS Customer

Engine : 6BTA-A

: 130.0 1st version kW : 2500 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 419 992 198

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 101 assembly

Openina

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter

x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

rpm : 12501st speed

Rack travel in mm : 13.00...13.10

Del.quantity cm3/: 14.4...14.6

100 s: (14.2...14.8)

Spread cm3 : 0.4

100 s: (0.7)

2nd speed rpm : 400.0Rack travel in mm : 5.2...5.4

Del.quantity cm3/ : 1.7...2.1

100 s: (1.5...2.4)

Spread cm3 : 0.6

100 s: (0.9)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed 400 rpm 1.50...1.90 travel mm 2nd speed 600 rpm 2.80...3.30 travel mm 1000 3rd speed rpm 4.80...5.40 travel mm 4th speed 1310 rpm 7.20...7.40 1500 travel mm 5th speed COID : 8.90...9.30 travel mm

GUIDE SLEEVE POSITION Control-Lever position Degree: -1

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rom Aneroid pressure h: 1200

Del.quantity : 144.0...146.0 1000 : (142.0...148.0) : 4.00 Spread cm3 1000 : (7.50) RATED SPEED 1st version Control lever position degrees: 55...63 Testing: 1st rack travel in: 12.00 Speed rpm : 1295...1305 2nd rack travel in: 4.00 Speed rpm : 1440...1470 4th rack travel in: 1580 Speed rpm : 0.00...1.00 LOW IDLE 1 Control lever position degrees: 11...19 Testing: Speed rpm: 275 Minimum rack trave: 7.00 Speed Speed rpm Rack travel in mm : 5.20...5.40 CONSTANT REGULATION rpm : 350...700 Speed TORQUE CONTROL Dimension a mm Torque control curve - 1st version 1st speed rpm : 1250
Rack travel in m: 13.00...13.10
2nd speed rpm : 800
Rack travel in m: 11.00...11.20 Aneroid/Altitude Compensator Test 1st version Setting rpm : hPa : Speed : 1250 1200 Pressure Rack travel mm : 13.00...13.10 Measurement 1/min: 1250 Speed 1st pressure hPa : -Rack travel in m: 8.30...8.70
2nd pressure hPa : 255
Rack travel in m: 9.60...9.70
3rd pressure hPa : 565
Rack travel in m: 11.60...12.00

START CUT-OUT 1/min: 290 (300) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 : 800 Speed rpm Del.quantity cm3/: 136.5...140.5 1000 s: (134.5...142.5) Spread : 8.00 cm31000 s: (12.0) Aneroid pressure h: -Speed rpm : 500 Del.quantity cm3/ : 97.5...101.5 1000 s: (95.5...103.5) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 12.00 rpm : 1295...1305 Speed STARTING FUEL DELIVERY : 100 Speed rpm Del.quantity cm3/: 135.0...175.0 1000 s: (130.0...180.0) Rack travel in mm: 10.90...11.90 LOW IDLE Speed rpm : 400 Rack travel in mm : 5.20...5.40 Del.quantity cm3/ : 17.5...21.5 1000 s: (15.0...24.0) cm3 : 6.00 1000 s: (9.00) Spread Remarks: : C.D.C. # 3921837 Start-of-delivery mark 6° cam angle after start of délivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS +				
Note remarks		0 (0 400 200 700		
Test sheet	: KHD 9,6 v : 05.03.93	+ Phasing : 0-60-120-180-240-300		
Edition Replaces Test oil	: 04.87	Tolerance + - ° : 0.50 (0.75)		
	: 150-4113	Time to cyl. no. : 6		
Combination no.	: 0 402 046 787	+ BASIC SETTING		
Injection pump	: PES6P110A720RS3104	1st speed rpm: 1000		
EP type number Governor	: 0 412 016 712	Rack travel in mm : 13.2013.30		
	: RQV3751000PA862 : 0 421 813 625	Del.quantity cm3/: 13.914.1		
Customer-spec. in	formation	100 s: (13.614.4)		
Customer	: KHD	- Spread cm3 : 0.4		
Engine	: BF6L513R	100 s: (0.7)		
1st version kW Rated speed	: 156.0 : 2000	2nd speed rpm : 375.0 Rack travel in mm : 8.08.2 Del.quantity cm3/: 1.62.2		
TEST BENCH REQUIR	EMENTS	+ 100 s: (1.32.4)		
Test oil inlet temp. °C	: 3842	Spread cm3 : 0.4 100 s: (0.7)		
Overflow valve	: 1 417 413 025	(B) Setting of injection pump with governor		
Inlet press., bar		GUIDE SLEEVE TRAVEL 1st speed rpm : 375		
Test nozzle holde assembly	er : 0 681 343 009	+ travel mm : 0.901.10 + 2nd speed rpm : 410 + travel mm : 1.601.90 + 3rd speed rpm : 550		
Opening pressure, bar	: 172175	travel mm : 2.803.10 + 4th speed rpm : 1050 + travel mm : 8.508.60		
Test lines	: 1 680 750 015	+ 5th speed rpm : 1110 + travel mm : 9.509.80		
Outside diameter x Wall thickness x Length mm	: 6.00x1.50x600	GUIDE SLEEVE POSITION Control-lever position Degree: -1		
(A) Injection pum Insp. values Set equal del per values	in parentheses ivery quant.	Speed rpm : 1050 Rack travel in mm : 15.2017.80 FULL LOAD DELIV. AT FULL LOAD STOP		
BEGINNING OF DELIVERY		1st version Speed rpm: 1000		
Prestroke mm	: 2.802.90 : (2.752.95)	+ Del.quantity : 139.0141.0 + 1000 : (136.0144.0)		
Rack travel in mm Firing order	: (2.752.95) i: 9.0012.00 : 6- 2- 4- 1- 5- 3	+ Spread cm3 : 4.00 + 1000 : (7.50)		

RATED SPEED 1st version Control lever position degrees: 117...125 Testing: 1st rack travel in: 12.20 Speed rpm : 1040...1050 2nd rack travel in: 4.00 Speed rpm : 1105...1135 4th rack travel in: 1250 Speed rpm : 0.00...1.00 LOW IDLE 1 Control lever position degrees: 86...94 Testing: Speed rpm : 100 Minimum rack trave: 9.50 Speed rpm : 375 Speed rpm : 375
Rack travel in mm : 8.00...8.20 CONSTANT REGULATION rpm : 375...480 Speed TORQUE CONTROL Dimension a mm : 0.20 Torque control curve - 1st version
1st speed rpm : 1000
Rack travel in m: 13.20...13.30
2nd speed rpm : 650
Rack travel in m: 13.40...13.50
3rd speed rpm : 825 Rack travel in m: 13.20...13.40 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 650 Del.quantity cm3/: 146.0...150.0 1000 s: (143.0...153.0) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 12.20 Speed rpm : 1040...1050 Speed STARTING FUEL DELIVERY rpm Del.quantity cm3/: 170.0...200.0 1000 s: (166.0...204.0)

H11

Remarks:

APPLICATION

Excavator

Prestroke mm : 4.30...4.40 : (4.25...4.45) Rack travel in mm : 9.00...12.00 Firing order : 6-2-4-1-BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : MB 11,7 a17 : 26.02.93 : 06.92 Test sheet Edition Replaces : ISO-4113 Test oil Phasing : 0-60-120-180-240-300 Combination no. : 0 402 046 807 Tolerance + - ° : 0.50 (0.75) Injection pump Time to cyl. no. : 6Pump designation : PES6P110A820LS3131 EP type number : 0 412 016 715 BASIC SETTING Governor Governor design. : RQV300..1100PA916 1st speed rom: 1100 Governer no. : 0 421 813 748 Rack travel in mm : 11.40...11.50 Customer-spec. information Customer : MERCEDES-BENZ Del.quantity cm3/: 13.7...13.9 Engine : 0M447 100 s: (13.4...14.1) ist version kW : 168.0 cm3 : 0.4Spread Rated speed : 2200 100 s: (0.8) TEST BENCH REQUIREMENTS 2nd speed rpm : 300.0 Rack travel in mm : 7.6...7.8 Del.quantity cm3/ : 1.4...2.0 100 s: (1.1...2.3) Test oil inlet temp. °C : 38...42 Overflow valve cm3 : 0.4Spread : 1 417 413 025 100 s: (0.8) Inlet press., bar: 1.50 (B) Setting of injection pump with governor Overflow quantity min. 1/h: 100...120 GUIDE SLEEVE TRAVEL 1st speed rpm 300 1.60...1.90 425 Test nozzle holder travel mm assembly : 0 681 343 009 2nd speed rpm 3.30...3.70 travel mm 3rd speed 920 Openina rpm : 172...175 5.70...6.10 pressure, bar travel mm 1155 4th speed rpm 7.90...8.40 travel mm Test lines : 1 680 750 015 5th speed rpm : 9.70...10.20 travel mm Outside diameter x Wall thickness GUIDE SLEEVE POSITION x Length mm : 6.00X1.50X600 Control-lever position Degree: -1 rpm : 1160 (A) Injection pump setting values Speed Insp. values in parentheses Rack travel in mm : 15.20...17.80 Set equal delivery quant. FULL LOAD DELIV. AT FULL LOAD STOP per values BEGINNING OF DELIVERY 1st version Test pressure, bar: 25...27 rpm : 1100 Speed

Del.quantity : 137.0...139.0 1000 : (134.5...141.5) Spread cm3 : 4.00 1000 : (8.00) RATED SPEED 1st version Control lever position degrees: 114...122 Testing: 1st rack travel in: 10.40 Speed rpm : 1140...1150 2nd rack travel in: 4.00 Speed rpm : 1195...1225 4th rack travel in: 1300 Speed rpm : 0.00...1.00 LOW IDLE 1 Control lever position degrees: 85...93 Testing: Speed rpm : 200 Minimum rack trave: 9.20 Speed rpm : 300 Speed rpm Rack travel in mm : 7.60...7.80 CONSTANT REGULATION rpm : 300...500 Speed START CUT-OUT Speed 1/min: 220 (240) FUEL DELIVERY CHARACTERISTICS 1st version **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 10.40 Speed rpm : 1140...1150 STARTING FUEL DELIVERY Speed : 100 rpm

H13

Del.quantity cm3/: 130.0...150.0 1000 s: (126.0...154.0)

Remarks:

:

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 14.00...17.00 Firing order : 1-5-3-6-2-4 BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks IHC 05.03.93 Test sheet Edition : 02.93 Replaces : ISO-4113 Test oil Phasing : 0-60-120-180-240-300 Combination no. : 0 402 046 838 Tolerance + - ° : 0.30 (0.75) Injection pump Time to cyl. no. : 1 Pump designation : PES6P100A320LS3306 EP type number : 0 412 006 703 BASIC SETTING Governor : RQV350...1200PA1042K : 0 421 815 320 Governor design. 1st speed rpm: 800 Governer no. Rack travel in mm: 13.80...13.90 Customer-spec. information Customer : NAVISTAR Del.quantity cm3/: 15.9...16.1 Engine : DTA-466 100 s: (15.7...16.3) : 172.0 1st version kW Spread cm3 : 0.8 Rated speed : 2400 100 s: (1.2) TEST BENCH REQUIREMENTS 2nd speed rpm : 350.0 Rack travel in mm : 6.0...6.2 Test oil Del.quantity cm3/: 1.7...2.1 100 s: (1.5...2.4) inlet temp. °C : 38...42 Overflow valve cm3 : 0.4 Spread : 1 417 413 058 100 s: (0.6) Inlet press., bar: 2.80 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 101 assembly GUIDE SLEEVE TRAVEL 1st speed Opening 1.80...2.00 travel mm pressure, bar : 207...210 2nd speed 500 rem travel mm 3.50...3.90 Orifice plate 3rd speed rpm 800 diameter mm : 0,6 6.20...6.60 travel mm 1250 4th speed rpm travel mm 9.30...9.50 Test lines : 1 680 750 008 5th speed 1400 rpm travel mm : 10.50...11.00 Outside diameter x Wall thickness GUIDE SLEEVE POSITION : 6.00x2.00x600 x Length mm Control-lever position Degree: -1 rpm : 1440 (A) Injection pump setting values Speed Insp. values in parentheses Set equal delivery quant. Rack travel in mm : 7.00...13.00 per values FULL LOAD DELIV. AT FULL LOAD STOP BEGINNING OF DELIVERY 1st version Test pressure, bar: 22...24 Speed rpm : 800 Aneroid pressure h: 1200

Del.quantity : 159.5...161.5 1000 : (157.5...163.5) cm3 : 8.00 1000 : (12.00) Spread RATED SPEED 1st version Control Lever position degrees: 116...124 Testina: 1st rack travel in: 13.60 rpm : 1240...1250 Speed 2nd rack travel in: 4.00 Speed rpm : 1415...1445 4th rack travel in: 1530 Speed rpm : 0.00...1.00 LOW IDLE 1 Control Lever position degrees: 74...83 Testing: Speed rpm : 275 Minimum rack trave: 7.70 Speed rpm : 350 Rack travel in mm : 6.10...6.30 CONSTANT REGULATION rpm : 350...520 Speed TORQUE CONTROL Dimension a mm :? Tarque control curve - 1st version Torque control curve - 1st version
1st speed rpm : 800
Rack travel in m: 13.80...13.90
2nd speed rpm : 1200
Rack travel in m: 14.60...14.80
3rd speed rpm : 600
Rack travel in m: 12.90...13.30 Aneroid/Altitude Compensator Test 1st version Setting npm : 1200 hPa : 1200 : 14.5 Speed Pressure Rack travel mm : 14.50...14.70 Measurement 1/min: 1200 Speed 1st pressure hPa : -Rack travel in m: 10.40...10.80 2nd pressure hPa : 300 Rack travel in m: 11.50...11.60 3rd pressure hPa : 660 H15

Rack travel in m: 13.50...13.90 START CUT-OUT Speed 1/min: 290 (300) FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 : 1200 Speed rpm Del.quantity cm3/: 160.0...164.0 1000 s: (158.0...166.0) Spread cm3 : 8.00 1000 s: (12.0) Aneroid pressure h: -Speed rpm : 1200 Del.quantity cm3/ : 94.5...98.5 1000 s: (92.5...100.5) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 13.60 Speed rpm : 1240...1250 Speed STARTING FUEL DELIVERY Speed rpm Del.quantity cm3/: 120.0...160.0 1000 s: (115.0...165.0) Rack travel in mm : 20.00...21.00 LOW IDLE Speed rpm : 350 Rack travel in mm : 6.00...6.20 Del.quantity cm3/: 17.5...21.5 1000 s: (15.0...24.0) Spread cm3 : 4.001000 s: (6.50) Remarks: : NAVISTAR #1819913c91 Delivery—valve spring pre-tension = 6.00...6.10 mm. Permissible alteration from 5.70...6.30

Bow dimension:

Sliding-sleeve position = 37.0 mm Limit shutoff stop screw to 1.0 mm. Start-of-delivery blocking at start of delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : IHC : 21.04.93 : 10.92 Test sheet Edition Replaces : ISO-4113 Test oil Combination no. : 0 402 046 841 Injection pump Pump designation : PES6P100A320LS3309 : 0 412 006 704 EP type number Governor Governor design. : RQV350...1300PA1042 -4K : 0 421 815 328 Governer no. Customer—spec. information Customer : NAVISTAR Engine : DTA-408 : 171.0 1st version kW Rated speed 2600 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 058 Inlet press., bar: 2.80 Overflow quantity min. 1/h: 175...195 Test nozzle holder : 1 688 901 101 assembly Openina pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600

(A) Injection pump setting values

per values

Insp. values in parentheses Set equal delivery quant.

BEGINNING OF DELIVERY Test pressure, bar: 22...24 Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 14.00...17.00 Firing order : 1-5-3-6-2- 4 : 0-60-120-180-240-300 Phasing Tolerance + - ° : 0.50 (0.75) Time to cyl. no. BASIC SETTING 1st speed rpm : 1300Rack travel in mm : 13.00...13.10 Del.quantity cm3/: 14.1...14.3 100 s: (13.9...14.5) cm3 : 0.8 Spread 100 s: (1.2) rpm : 350.02nd speed Rack travel in mm : 5.4...5.6 Del.quantity cm3/ : 1.3...1.7 100 s: (1.0...1.9) Spread cm3 : 0.4 100 s: (0.6) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL : 350 1st speed rpm 1.60...2.00 travel mm 2nd speed 500 rpm 3.80...4.20 800 travel mm 3rd speed ripin 5.80...6.20 travel mm 1300 4th speed rpm 8.90...9.10 travel mm 1500 5th speed **CDW** : 10.40...10.80 travel mm FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1300 Speed Aneroid pressure h: 1200 Del.quantity : 141.5...143.5 1000 : (139.5...145.5)

cm3 : 8.00 1000 : (12.00) Spread RATED SPEED 1st version Control lever position degrees: 61...69 Testing: 1st rack travel in: 12.00 : 1340...1370 Speed rpm 2nd rack travel in: 4.00 : 1510...1520 Speed rpm 4th rack travel in: 1650 rpm : 0.00...1.00Speed LOW IDLE 1 Control lever position degrees: 16...24 Testing: Speed rpm Minimum rack trave: 6.50 rpm Rack travel in mm : 5.40...5.60 CONSTANT REGULATION rpm : 350...520 Speed TORQUE CONTROL Dimension a mm Torque control curve - 1st version rpm : 1300 1st speed Rack travel in m: 13.00...13.10 : 1000 2nd speed rpm Rack travel in m: 12.60...12.80 rd speed rpm : 700 Rack travel in m: 11.80...12.20 3rd speed 900 4th speed ubii Rack travel in m: 12.50...12.70 Aneroid/Altitude Compensator Test 1st version Setting : 1300 Speed rem : 1200 hPa Pressure Rack travel : 13.00...13.10 mm Measurement 1/min: 1300 Speed 1st pressure hPa :-Rack travel in m: 9.30...9.70 2nd pressure hPa : 300 Rack travel in m: 10.50...10.60 3rd pressure hPa : 670

Rack travel in m: 11.80...12.20 START CUT-OUT 1/min : 280 (290) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rpm : 1000 Del.quantity cm3/: 143.5...147.5 1000 s: (141.5...149.5) Spread cm3 : 8.001000 s: (12.0) Aneroid pressure h: -Speed rpm : 900 Del.quantity cm3/: 85.5...89.5 1000 s: (83.5...91.5) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 12.00 rpm : 1340...1370 STARTING FUEL DELIVERY Speed : 100 rpm Del.quantity cm3/: 120.0...160.0 1000 s: (115.0...165.0) Rack travel in mm: 20.00...21.00 LOW IDLE Speed rpm : 350 Rack travel in mm : 5.40...5.60 Del.quantity cm3/ : 13.0...17.0 1000 s: (10.5...19.5) cm3 : 4.00 1000 s: (6.50) : 4.00 Spread Remarks: : NAVISTAR #1819917c91 Limit shutoff stop screw to 1.0 mm. Bow dimension: Sliding-sleeve position = 37.0 mm Start-of-delivery blocking at start of

delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS BEGINNING OF DELIVERY Note remarks Test pressure, bar: 22...24 Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 14.00...15.00 Firing order : 1-5-3-6-Test sheet : NAV : 21.04.93 Edition Replaces : ISO-4113 Test oil 2- 4 Combination no. : 0 402 046 842 Injection pump Phasing : 0-60-120-180-240-300 Pump designation : PES6P100A320LS3309 : 0 412 006 704 EP type number Tolerance + - ° : 0.50 (0.75) Governor Governor design. : RQV350...1300PA1042 Time to cyl. no. : 1 : 0 421 815 329 Governer no. BASIC SETTING Customer-spec. information 1st speed rpm : 1300: NAVISTAR Customer Rack travel in mm : 12.90...13.00 **Engine** : DTA-408 Del.quantity cm3/: 14.2...14.4 1st version kW : 156.5 : 2600 Rated speed 100 s: (14.0...14.6) TEST BENCH REQUIREMENTS Spread cm3 : 0.8Test oil 100 s: (1.2) inlet temp. °C : 38...42 2nd speed rpm : 350.0Rack travel in mm : 5.3...5.5

Del.quantity cm3/ : 1.3...1.7

100 s: (1.0...1.9)

Spread cm3 : 0.4 Overflow valve : 1 417 413 058 Inlet press., bar: 2.80 100 s: (0.6) Overflow quantity min. 1/h: 240...260 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 101 assembly GUIDE SLEEVE TRAVEL 1st speed 350 Openina . travel mm 1.60...2.00 : 207...210 pressure, bar 2nd speed 500 rpm travel mm 3.80...4.20 Orifice plate 3rd speed 800 rpm diameter mm : 0,6 5.80...6.20 travel mm 4th speed 1300 rpm 8.90...9.10 1500 travel mm Test lines : 1 680 750 008 5th speed rpm 10.40...10.80 travel mm Outside diameter x Wall thickness FULL LOAD DELIV. AT FULL LOAD STOP : 6.00x2.00x600 x Length mm 1st version (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. Speed rpm : 1300 Aneroid pressure h: 1200 Del.quantity : 142.0...144.0 Del.quantity : 142.0...146.0) per values

cm3 : 8.00 1000 : (12.00) Spread RATED SPEED 1st version Control lever position degrees: 59...67 Testing: 1st rack travel in: 11.90 Speed 1340...1370 rom 2nd rack travel in: 4.00 : 1510...1520 Speed rpm 4th rack travel in: 1650 : 0.00...1.00 Speed COM LOW IDLE 1 Control lever position degrees: 16...24 Testing: Speed n'or! Minimum rack trave: 6.00 Speed rom Rack travel in mm : 5.30...5.50 CONSTANT REGULATION : 350...520 Speed rpin TORQUE CONTROL Dimension a mm Torque control curve - 1st version st speed rpm : 1300
Rack travel in m: 12.90...13.00
ad speed rpm : 900
Rack travel 1st speed 2nd speed rpm : 900 Rack travel in m: 12.50...12.70 3rd speed rpm : 700 Rack travel in m: 11.80...12.20 rpm : 700 Aneroid/Altitude Compensator Test 1st version Setting Speed 1300 rpm hPa 1200 Pressure Rack travel mm : 12.90...13.00 Measurement 1/min: 1300 Speed 1st pressure hPa : -Rack travel in m: 9.30...9.70

2nd pressure hPa : 290

Rack travel in m: 10.40...10.50

3rd pressure hPa : 700

Rack travel in m: 11.80...12.20

START CUT-OUT 1/min: 280 (290) Speed FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 1200 Speed rpm : 900
Del.quantity cm3/: 146.0...150.0
1000 s: (144.0...152.0)
Spread cm3 : 8.00
1000 s: (12.0) Aneroid pressure h: -: 1300 Speed rpm Del.quantity cm3/: 85.5...39.5 1000 s: (83.5...91.5) **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 11.90 rpm : 1340...1370 Speed STARTING FUEL DELIVERY LOW IDLE Speed rpm : 350 Rack travel in mm : 5.30...5.50 Del.quantity cm3/: 13.0...17.0 1000 s: (10.5...19.5) : 4.00 Spread 1000 s: (6.50) Remarks: : NAVISTAR #1819918091 Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

: IHC : 26.02.93 : 02.93 Test sheet Edition Replaces : ISO-4113 Test oil

Combination no. : 0 402 046 845

Injection pump

Pump designation : PES6P100A320LS3309 EP type number : 0 412 006 704

Governor

: RQV350...1300PA1042 Governor design.

: 0 421 815 330 Governer no.

Customer—spec. information Customer : NAVISTAR

: DTA-408 Engine

: 142.0 1st version kW Rated speed : 2600

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 058

Inlet press., bar : 2.80

Overflow

quantity min. 1/h: 240...260

Test nozzle holder

: 1 688 901 101 assembly

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,6

Test Lines : 1 680 750 008

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 22...24

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 14.00...17.00 Firing order : 1-5-3-6-2-4

Phasina : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 900

Rack travel in mm : 12.10...12.20

Del.quantity cm3/: 13.6...13.8

100 s: (13.4...14.0)

cm3 : 0.8Spread

100 s: (1.2)

2nd speed rpm : 350.0Rack travel in mm : 5.4...5.6

Del.quantity cm3/: 1.3...1.7 100 s: (1.0...1.9)

Spread cm3 : 0.4100 s: (0.6)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

350 1st speed travel mm

1.60...2.00 500 2nd speed

rpm travel mm 3.80...4.20

3rd speed rpm 800

5.80...6.20 travel mm

1300 4th speed rpm travel mm 8.90...9.10

1500 5th speed rpm

: 10.40...10.80 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: -1 rpm : 1500

**Speed** Rack travel in mm : 8.00...14.00

FULL LOAD DELIV. AT FULL LOAD STOP

Rack travel in m: 9.50...9.90 2nd pressure hPa : 250 Rack travel in m: 10.30...10.40 1st version : 900 Speed rpm Aneroid pressure h: 1200 Del.quantity : 136.5...138.5 1000 : (134.5...140.5) 3rd pressure hPa : 600 Rack travel in m: 11.60...12.00 Spread cm3 : 8.00 START CUT-OUT 1000 : (12.00) Speed 1/min : 290 (300) RATED SPEED FUEL DELIVERY CHARACTERISTICS 1st version Control lever position degrees: 112...120 1st version Aneroid pressure h: 1200 Speed rpm : 1300
Del.quantity cm3/ : 134.0...138.0
1000 s: (132.0...140.0)
Spread cm3 : 8.00 Testing: 1st rack travel in: 11.40 Speed rpm : 1340...1370 2nd rack travel in: 4.00 : 1500...1510 Speed rpm 1000 s: (12.0) 4th rack travel in: 1530 Aneroid pressure h: -Speed rpm : 1300 Del.quantity cm3/ : 87.0...91.0 1000 s: (85.0...93.0) Speed : 0.00...1.00 man LOW IDLE 1 Control lever position degrees: 71...79 **BREAKAWAY** Testing: Speed 1st version COM Minimum rack trave: 6.00 1mm rack travel less than nom: Rack travel in mm : 5.40...5.60 full load rack tr: 11.40 rpm : 1340...1370 CONSTANT REGULATION rpm : 350...520 Speed STARTING FUEL DELIVERY TORQUE CONTROL Dimension a mm Speed rpm : 100 Del.quantity cm3/ : 120.0...160.0 1000 s: (115.0...165.0) Rack travel in mm : 20.00...21.00 Torque control curve - 1st version 1st speed rpm : 900 Rack travel in m: 12.10...12.20 2nd speed rpm : 1300 2nd speed rpm : 1300 Rack travel in m: 12.40...12.60 LOW IDLE rpm : 700 3rd speed Speed rpm ; 350
Rack travel in mm : 5.40...5.60
Del.quantity cm3/ : 13.0...17.0
1000 s: (10.5...19.5) Rack travel in m: 11.40...11.80 Aneroid/Altitude Compensator Test Spread cm3 : 4.001000 s: (6.50) 1st version Setting Remarks: Speed : 1300 **CDM** : NAVISTAR #1819922C91 hPa : 1200 Pressure Rack travel mm : 12.40...12.60 Bow dimension: Sliding-sleeve position = 37.0 mm Measurement Limit shutoff stop screw to 1.0 mm. Speed 1/min: 1300 1st pressure hPa : -Start-of-delivery blocking at start of H22

delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Phasing : 0-60-120-180-240-300 : AIF 11.6 a : 05.03.93 : 12.91 Test sheet Edition Tolerance + - ° : 0.50 (0.75) Replaces Test oil : ISO-4113 BASIC SETTING Combination no. : 0 402 076 058 rpm: 1200 1st speed Injection pump Rack travel in mm : 13.50...13.70 Pump designation : PES6P120A700RS532-1 EP type number : 0 412 026 061 Del.quantity cm3/: 23.4...23.6 Governor : RSV300...1200P0A552 : 0 421 833 368 Governor design. 100 s: (23.1...23.9) Governer no. Spread cm3 : 0.5Customer-spec, information Customer : IVECO-AIFO 100 s: (0.9) Engine : 8361 SRM 37 rpm : 300.0 2nd speed Rack travel in mm : 4.6...5.0 Del.quantity cm3/: 1.7...2.3 100 s: (1.4...2.6) TEST BENCH REQUIREMENTS Test oil Spread cm3 : 0.8 inlet temp. °C 100 s: (1.2) : 38...42 Overflow valve GUIDE SLEEVE POSITION : 1 417 413 025 Control-lever position Degree: -3 Inlet press., bar: 1.50 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Test nozzle holder : 1 688 901 019 assembly Governor spring pre-tension Click setting x : 4.00Openina FULL LOAD DELIV. AT FULL LOAD STOP : 207...210 pressure, bar Orifice plate 1st version diameter mm : 0,8 Speed rpm : 1200 Aneroid pressure h: 900 Del.quantity : 234.0...236.0 1000 : (231.0...239.0) Test lines : 1 680 750 075 : 5.00 Spread cm3 Outside diameter 1000 : (9.00) x Wall thickness x Length mm : 8.00x2,50x1000 RATED SPEED (A) Injection pump setting values Insp. values in parentheses 1st version Control lever Set equal delivery quant. position degrees: 98...106 per values \_ Testing: BEGINNING OF DELIVERY 1st rack travel in: 12.50 Speed rpm : 1240...1250 2nd rack travel in: 4.00 Speed rpm : 1295...1325 Prestroke mm : 3.50...3.60 : (3.45...3.65) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-4th rack travel in: 1450

2- 4

H24

Speed

rpm : 0.30...1.40

LOW IDLE 1 Control lever position degrees: 66...74 Setting point w/out bumper spring rpm Rack travel in mm: 4.3

Testing:

Speed rpm : 100 Speed rpm : 300 Rack travel in mm : 4.70...4.90 Rack travel in mm : 2.00 Speed rpm : 345...405

TORQUE CONTROL Torque control curve - 1st version st speed rpm : 1200 Rack travel in m: 13.50...13.60 1st speed 2nd speed rpm : 550
Rack travel in m: 13.50...13.70
3rd speed rpm : 350
Rack travel in m: 14.70...15.30

Aneroid/Altitude Compensator Test

1st version Setting rpm : 500 hPa : 900 mm : 13.50...13.70 Speed Pressure

Rack travel mm

Measurement

 $1/\min : 500$ Speed

1st pressure hPa : -Rack travel in m: 12.00...12.20 2nd pressure hPa : 400 Rack travel in m: 12.90...13.00

FUEL DELIVERY CHARACTERISTICS

1st version Aneroid pressure h: rpm : 500 Speed

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 12.50 Speed rpm : 1240...1250 Speed

LOW IDLE

H25

Speed rpm : 300
Rack travel in mm : 4.60...5.00
Del.quantity cm3/: 17.0...23.0
1000 s: (14.0...26.0)
Spread cm3 : 8.00
1000 s: (12.00)

Remarks:

Check electrically unlatched starting fuel delivery (EES) with 24 volt.

On activation of the starting solenoid, the start position must be reached.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition : DEE : 21.04.93 Replaces : ISO-4113 Test oil Combination no. : 0 402 076 059 Injection pump Pump designation : PES6P110A720RS370 : 0 412 016 052 EP type number Governor : RSV500...900P0A455-5 : 0 421 833 400 Governor design. Governer no. Customer spec. information : JOHN DEERE Customer Engine : 6619T F01 : 200.0 1st version kW : 1800 Rated speed TEST BENCH REQUIREMENTS Test oil : 38...42 inlet temp. °C Overflow valve : 1 457 413 010 Inlet press., bar: 1.50 Test nozzle holder : 0 681 343 009 assembly Opening : 175...178 pressure, bar Test lines : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00x3.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY Test pressure, bar: 27...29 : 2.75...2.85 : (2.70...2.90) Prestroke mm

Rack travel in mm : 9.00...12.00

H26

Firing order : 1-5-3-6-2-4 : 0-60-120-180-240-300 Phasing Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 900 Rack travel in mm : 10.60...10.70 Del.quantity cm3/: 12.3...12.5 100 s: (12.1...12.7) cm3 : 0.4Spread 100 s: (0.6) 2nd speed rpm : 500.0
Rack travel in mm : 6.3...6.5
Del.quantity cm3/ : 1.9...2.3
100 s: (1.6...2.5) : 0.6 Spread cm3100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 Speed rpm: 800 Rack travel in mm: 0.30...0.70 Governor spring pre-tension Click setting x : ? FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 900 : 123.0...125.0 : (121.0...127.0) Del.quantity 1000 : 4.00 Spread cm3 1000 : (6.50)RATED SPEED 1st version Control lever position degrees: 38...46 Testing: 1st rack travel in: 9.60 : 945...955 Speed rpm 2nd rack travel in: 4.00

: 1040...1050

Speed

rpm

3rd rack travel in: 4.00 Speed rpm : 1030...1060 4th rack travel in: 1200 Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 20...28 Setting point w/out bumper spring Speed rpm : 500

Rack travel in mm: 5.9

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 500 Rack travel in mm : 6.30...6.50

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 900 Rack travel in m: 10.60...10.70

2nd speed rpm : 650 Rack travel in m: 11.20...11.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 650 Del.quantity cm3/ : 138.0...142.0 1000 s: (136.0...144.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 9.60 Speed rpm : 945...955

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 500 Rack travel in mm : 6.30...6.50 Del.quantity cm3/ : 19.0...23.0 1000 s: (16.5...25.5) Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

H27

: JOHN DEERE # AR88760

Starting/full-load transition speed from holding magnet = 450 1/min.

Start-of-delivery mark is at 15° angular displacement of the cam after start of delivery at cylinder 1 with control-rod travel 9.00...12.00 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : DEE : 21.04.93 : 01.93 Edition Replaces Test oil : ISO-4113 Combination no. : 0 402 076 752 Injection pump Pump designation : PES6P11CA72ORS3144 : 9 410 231 035 EP type number Governor : RSV400...1050P0A513 Governor design. : 0 421 833 399 Governer no. Customer-spec. information Customer : JOHN DEERE : 6619 A Engine : 215.0 : 2100 1st version kW Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 457 413 010 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly **Opening** : 207...210 pressure, bar Orifice plate diameter mm : 0,6 Test lines : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00X3.00X600 (A) Injection pump setting values

Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

: 3.45...3.55 : (3.40...3.60) : 9.00...12.00 Prestroke mm Rack travel in mm : : 1-5-3-6-2-4 Firing order Phasing : 0-60-120-180-240-300 : 0.50 (0.75) Tolerance + - ° Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1050Rack travel in mm : 13.60...13.70 Del.guantity cm3/: 21.5...21.7 100 s: (21.3...21.9) cm3 : 0.4Spread 100 s: (0.6) rpm : 400.0 2nd speed Rack travel in mm : 5.8...6.0 Del.quantity cm3/ : 1.8...2.2 100 s: (1.5...2.4) cm3 : 0.6 Spread 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x :? FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1050 Speed Aneroid pressure h: 900 Del.quantity : 215.0...217.0 1000 : (213.0...219.0) Spread cm3 : 4.00 1000 : (6.50) RATED SPEED 1st version Control Lever position degrees: 41...49

H28

Testing: 1st račk travel in: 12.60 : 1100...1110 Speed rom Speed rpm : 1100...110
2nd rack travel in: 4.00
Speed rpm : 1180...1190
3rd rack travel in: 4.00
Speed rpm : 1170...1200
4th rack travel in: 1280
Speed rpm : 0.30...1.40 LOW IDLE 1 Control lever position degrees: 19...27 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.4 Testing: Speed rpm : 100 Minimum rack trave: 19.00 rpm : 400 Rack travel in mm : 5.80...6.00 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1050 Rack travel in m: 13.60...13.70 2nd speed rpm : 750 Rack travel in m: 14.40...14.60 Aneroid/Altitude Compensator Test 1st version Setting rpm : 500 hPa : 900 Speed Pressure : 14.40...14.60 Rack travel mm Measurement 1/min : 500 Speed 1st pressure hPa : -Rack travel in m: 11.20...11.40 2nd pressure hPa : 240 Rack travel in m: 12.10...12.50 3rd pressure hPa : 720 Rack travel in m: 14.00...14.10 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 600 Speed rpm : 750
Del.quantity cm3/ : 219.5...223.5
1000 s: (217.5...225.5) Aneroid pressure h: -: 500 Speed rpm

J01

Del.quantity cm3/: 156.0...160.0 1000 s: (154.0...162.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.60 Speed rpm : 1100...1110

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 170.0...190.0 1000 s: (166.0...194.0)

LOW IDLE

Speed rpm : 400 Rack travel in mm : 5.80...6.00 Del.quantity cm3/ : 18.0...22.0 1000 s: (15.5...24.5) Spread cm3 : 6.00

pread cm3 : 6.00 1000 s: (8.00)

Remarks:

: JOHN DEFRE # RE23749

Starting/full-load transition speed from holding magnet = 450 1/min.

Start-of-delivery mark 13° cam angle after start of delivery cyl. 1.

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : NAV Edition : 21.04.93 Replaces

Test oil : ISO-4113

Combination no. : 0 402 076 755

Injection pump

Pump designation : PES6P110A320LS3318

: 0 412 016 741 EP type number

Governor

: RSV350...750P4A561 : 0 421 833 406 Governor design.

Governer no.

Customer spec. information Customer : NAVISTAR

Engine : DTA-466

1st version kW : 185.0 Rated speed : 150G

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 058

Inlet press., bar: 2.80

Overflow

quantity min. 1/h: 175...195

Test nozzle holder

: 1 688 901 101 assembly

Opening

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,6

Test lines : 1 630 750 008

Outside diameter x Wall thickness x Length mm

: 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values \_

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

Phasina : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 700

Rack travel in mm : 12.50...12.60

Del.quantity cm3/: 20.9...21.1

100 s: (20.7...21.3)

Spread cm3 : 0.8

100 s: (1.2)

2nd speed rpm : 350.0 Rack travel in mm : 5.5...5.7 Del.quantity cm3/ : 3.9...4.3 100 s: (3.7...4.5)

cm3 : 0.4 100 s: (0.6) Spread

GUIDE SLEEVE POSITION

Control-lever position Degree: -3

Speed rpm: 800 Rack travel in mm: 0.30...0.70

Governor spring pre-tension Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 700

Del.quantity : 209.0...211.0 1000 : (207.0...213.0)

: 8.00 Spread cm31000 : (12.00)

RATED SPEED

1st version

Control lever

position degrees: 38...46

**J02** 

Testing: 1st rack travel in: 11.50 Speed rpm: 765...775 2nd rack travel in: 4.00 Speed rpm: 800...810 3rd rack travel in: 4.00 : 805...815 Speed rpm 4th rack travel in: 900 rpm : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 18...26
Setting point w/out bumper spring
Speed rpm : 350
Rack travel in mm : 5.60 Testing: : 100 Speed rpm Minimum rack trave: 19.00 Speed rpm : 350 Rack travel in mm : 5.50...5.70 **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 11.50 Speed rpm : 765...775 Speed STARTING FUEL DELIVERY Speed rpm Del.quantity cm3/: 135.0...175.0 1000 s: (130.0...180.0) Rack travel in mm : 20.00...21.00 LOW IDLE Speed rpm : 350
Rack travel in mm : 5.50...5.70
Del.quantity cm3/: 39.5...43.5
1000 s: (37.0...45.0) Spread cm3: 4.00 1000 s: (6.50) Remarks: : NAVISTAR #1820271C91 Start-of-delivery blocking at start of delivery of cylinder no. 1. **APPLICATION** Generator

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet Edition : NAV

: 21.04.93

Replaces Test oil : ISO-4113

Combination no. : O 402 076 755A

Injection pump

Pump designation : PES6P110A320LS3318

EP type number : 0 412 016 741

Governor

: RSV350...750P4A561 : 0 421 833 406 Governor design.

Governer no.

Cust. part no. : 1820271C91A

Customer-spec. information

Customer : NAVISTAR

Engine : DTA-466

: 208.0 1st version kW Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 058

Inlet press., bar: 2.80

Overflow

quantity min. 1/h: 175...195

Test nozzle holder

: 1 688 901 101 assembly

Opening 1 4 1

pressure, bar : 207...210

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

: 2.95...3.05 Prestroke mm

: (2.90...3.10)
Rack travel in mm : 9.00...12.00
Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 850

Rack travel in mm : 12.50...12.60

Del.quantity cm3/: 19.9...20.1

100 s: (19.7...20.3)

cm3 : 0.8Spread

100 s: (1.2)

2nd speed rpm : 350.0 Rack travel in mm : 5.5...5.7 Del.quantity cm3/ : 3.9...4.3 100 s: (3.7...4.5)

Spread cm3: 0.4

100 s: (0.6)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3 rpm : 800 Speed

Rack travel in mm : 0.30...0.70

Governor spring pre-tension Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed : 850 rpm

Specu Del.quantity 1000 : 199.5...201.5 : (197.5...203.5)

Spread : 8.00 cm3

1000 : (12.00)

# RATED SPEED 1st version Control lever position degrees: 45...53 Testing: 1st rack travel in: 11.50 Speed rpm : 915...925 2nd rack travel in: 4.00 rpm : 940...950 Speed 3rd rack travel in: 4.00 Speed rpm: 945...955 4th rack travel in: 1050 Speed rpm: 0.30...1.40 LOW IDLE 1 Control lever position degrees: 18...26 Setting point w/out bumper spring Speed rpm : 350 Rack travel in mm : 5.6 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 350 Rack travel in mm : 5.50...5.70 BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 11.50 Speed rpm : 915...925 STARTING FUEL DELIVERY Speed rpm : 100 Del.quantity cm3/ : 135.0...175.0 1000 s: (130.0...180.0) Rack travel in mm : 20.00...21.00 LOW IDLE Speed rpm: 350 Rack travel in mm: 5.50...5.70 Del.quantity cm3/: 39.5...43.5 1000 s: (37.0...45.0) Spread cm3: 4.00 1000 s: (6.50) Start-of-delivery blocking at start of delivery of cylinder no. 1.

Generator

J05

**APPLICATION** 

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet Edition : NAV : 21.04.93 Replaces Test oil : ISO-4113

Combination no. : 0 402 076 756

Injection pump

Pump designation : PES6P100A320LS3317 : 0 412 006 706 EP type number

Governor

Governor design. : RSV350...1200P2A562 Governor no. : 0 421 833 407

Customer-spec. information Customer : NAVISTAR

: DTA-466 Engine

: 204.0 1st version kW Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 058

Inlet press., bar: 2.80

Overflow

quantity min. 1/h: 175...195

Test nozzle holder

: 1 688 901 101 assembly

Openina

pressure, bar : 207...210

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter x Wall thickness x Length mm

: 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 Firing order : 1-5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 14.60...14.70

Del.quantity cm3/: 16.8...17.0

100 s: (16.6...17.2)

Spread cm3 : 0.8

100 s: (1.2)

2nd speed rpm : 350.0

Rack travel in mm : 4.8...5.0 Del.quantity cm3/ : 1.5...1.9 100 s: (1.2...2.1)

cm3 : 0.4 100 s: (0.6) Spread

GUIDE SLEEVE POSITION

Control-lever position Degree: -3

rpm : 800 Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rom : 1200

Aneroid pressure h: 1500

Del.quantity
1000 : 168.0...170.0 : (166.0...172.0)

: 8.00 : (12.00) Spread cm3

1000

RATED SPEED

1st version

Control lever position degrees: 53...61 Testing: 1st rack travel in: 13.60 Sneed rpm : 1245...1255 2nd rack travel in: 4.00 : 1315...1325 Speed rom 3rd rack travel in: 4.00 Speed rpm : 1320...1330 4th rack travel in: 1400 riom : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 14...22 Setting point w/out bumper spring Speed rpm : 350 Rack travel in mm : 4.9 Testing: Speed rpm Minimum rack trave: 19.00 : 350 Speed rpm Rack travel in mm : 4.80...5.00 Aneroid/Altitude Compensator Test 1st version Setting : 500 Speed rpm hPa : 1500 Pressure : 14.60...14.70 Rack travel mm Measurement  $1/\min : 500$ Speed 1st pressure hPa : Rack travel in m: 7.50...7.90
2nd pressure hFa : 290
Rack travel in m: 9.50...9.60
3rd pressure hPa : 700
Rack travel in m: 12.80...13.20 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: Speed rpm : 500
Del.quantity cm3/ : 75.5...79.5
1000 s: (73.5...81.5) BREAKAWAY

1mm rack travel less than full load rack tr: 13.60 : 1245...1255 Speed rpm STARTING FUEL DELIVERY : 100 Speed rpm Del.quantity cm3/: 125.0...165.0 1000 s: (120.0...170.0) Rack travel in mm: 20.00...21.00 LOW IDLE rpm : 350 Speed Rack travel in mm : 4.80...5.00 Del.quantity cm3/: 15.0...19.0 1000 s: (12.5...21.5) Spread cm3 : 4.00 1000 s: (6.50) Remarks: Start-of-delivery blocking at start of 1 delivery of cylinder no. 1. Delivery-valve spring pre-tension = 6.30...6.40 mm. Permissible alteration from 6.00...6.70

1st version

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

: NAV

Test sheet Edition : 21.04.93

Replaces

Test oil : ISO-4113

Combination no. : 0 402 076 756A

Injection pump

: PES6P100A320LS3317 Pump designation

EP type number : 0 412 006 706

Governor

: RSV350...1200P2A562 : 0 421 833 407 Governor design.

Governer no.

Cust. part no. : 1820269091A

Customer—spec. information

Customer : NAVISTAR

Engine : DTA-466

: 185.0 1st version kW Rated speed : 2400

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 058

Inlet press., bar: 2.80

Overflow

quantity min. 1/h: 175...195

Test nozzle holder

: 1 688 901 101 assembly

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter x Wall thickness

x Length mm : 6.00X2.00X600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05

(2.90...3.10)

Rack travel in mm: 9.00...12.00

Firing order: 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1200

Rack travel in mm : 13.90...14.00

Del.quantity cm3/ : 15.6...15.8

100 s: (15.4...16.0)

cm3 : 0.8Spread

100 s: (1.2)

rpm : 350.02nd speed

Rack travel in mm : 4.8...5.0 Del.quantity cm3/ : 1.5...1.9 100 s: (1.2...2.1)

cm3 : 0.4 Spread

100 s: (0.6)

GUIDE SLEEVE POSITION

Control-lever position Degree: -3

rpm : 800 Speed Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200 Aneroid pressure h: 1500

Anerous Deliquantity 1000 : 156.0...158.0 : (154.0...160.0) : 8.00 : (12.00)

cm3 Spread 1000

## RATED SPEED

1st version Control lever

position degrees: 53...61

Testing:

1st rack travel in: 12.90

: 1250...1260 Speed rpm

2nd rack travel in: 4.00 : 1315...1325 Speed MORI

3rd rack travel in: 4.00

Speed rpm : 1320...1330 4th rack travel in: 1400

Speed rpm : 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 14...22 Setting point w/out bumper spring

Speed rpm : 350 Rack travet in mm : 4.9

Testing:

Speed

Speed rpm: 100
Minimum rack trave: 19.00
Speed rpm: 350
Rack travel in mm: 4.80...5.00

Aneroid/Altitude Compensator Test

1st version

Setting

Speed rpm .

Pressure

rpm : 500 hPa : 1500 mm : 13.90...14.00 Rack travel mm

Measurement

1/min : 500 Speed

1st pressure hPa : -

Rack travel in m: 7.50...7.90

2nd pressure hPa : 270
Rack travel in m: 9.30...9.40
3rd pressure hPa : 640

Rack travel in m: 12.30...12.70

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/ : 75.5...79,5 1000 s: (73.5...81.5)

### **BREAKAWAY**

1st version

1mm rack travel less than

full load rack tr: 12.90

rpm : 1250...1260

STARTING FUEL DELIVERY

Speed rpm

Del.quantity cm3/: 125.0...165.0 1000 s: (120.0...170.0) Rack travel in mm: 20.00...21.00

LOW JDLE

Speed rpm : 350
Rack travel in mm : 4.80...5.00
Del.quantity cm3/ : 15.0...19.0
1000 s: (12.5...21.5)

Spread cm3 : 4.00

1000 s: (6.50)

Start-of-delivery blocking at start of

delivery of cylinder no. 1.

Delivery-valve spring pre-tension = 6.30...6.40 mm.

Permissible alteration from 6.00...6.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

: NAV Test sheet

Edition : 21.04.93

Replaces

: ISO-4113 Test oil

Combination no. : 0 402 076 756B

Injection pump

Pump designation : PES6P100A320LS3317

: 0 412 006 706 EP type number

Governor

: RSV350...1200P2A562 : 0 421 833 407 Governor design.

Governer no.

Cust. part no. : 1820269091B

Customer-spec, information

Customer : NAVISTAR

Engine : DTA-465

: 156.0 1st version kW

: 2400 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 058

Inlet press., bar : 2.80

Overflow

quantity min. 1/h: 175...195

Test nozzle holder

: 1 688 901 101 assembly

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter

x Wall thickness

: 6.00X2.00X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

: 0-60-120-180-240-300 Phasing

Tolerance \* - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

rpm: 1200 1st speed

Rack travel in mm : 13.40...13.50

Del.guantity cm3/: 14.9...15.1

100 s: (14.7...15.3)

Spread cm3 : 0.8

100 s: (1.2)

rpm : 350.0 2nd speed

Rack travel in mm : 4.8...5.0 Del.quantity cm3/ : 1.5...1.9 100 s: (1.2...2.1)

Spread cm3 : 0.4

100 s: (0.6)

GUIDE SLEEVE POSITION

Control-lever position Degree: -3

rpm : 800 Speed Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm: 1200
Aneroid pressure h: 1500
Del.quantity: 149.0...151.0
1000: (147.0...153.0)

: 8.00 Spread cm3

1000 : (12.00)

## RATED SPEED

1st version Control Lever

position degrees: 53...61

Testing:

1st rack travel in: 12.40 Speed rpm : 1255...1265

2nd rack travel in: 4.00 : 1315...1325 Speed rpm

3rd rack travel in: 4.00

Speed rpm: 1320...1330 4th rack travel in: 1400 Speed rpm: 0.30...1.40

LOW IDLE 1

Control lever

position degrees: 14...22

Setting point w/out bumper spring

Speed rpm : 350 Rack travel in mm : 4.9

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 350

Rack travel in mm : 4.80...5.00

Aneroid/Altitude

Compensator Test

1st version

Setting

Speed rpm

Pressure

rpm : 500 hPa : 1500 mm : 13.40...13.50 Rack travel mm

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 7.50...7.90

2nd pressure hPa : 260 Rack travel in m: 9.20...9.30

3rd pressure hPa : 600

Rack travel in m: 12.00...12.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/ : 75.5...79.5 1000 s: (73.5...81.5)

### **BREAKAWAY**

1st version

1mm rack travel less than

full load rack tr: 12.40 Speed rpm : 1255...1265 Speed

STARTING FUEL DELIVERY

rpm

Del.quantity cm3/: 125.0...165.0 1000 s: (120.0...170.0) Rack travel in mm: 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 4.80...5.00
Del.quantity cm3/ : 15.0...19.0
1000 s: (12.5...21.5)

Spread cm3 : 4.00

1000 s: (6.50)

Start-of-delivery blocking at start of

delivery of cylinder no. 1.

Delivery-valve spring pre-tension = 6.30...6.40 mm.

Permissible alteration from 6.00...6.70

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : NAV

Edition : 21.04.93

Replaces

Test oil : ISO-4113

Combination no. : 0 402 076 756c

Injection pump

Pump designation : PES6P100A320LS3317 EP type number : 0 412 006 706

Governor

Governor design. : RSV350...1200P2A562 Governer no. : 0 421 833 407

Cust. part no. : 1820269091c

Customer-spec, information Customer : NAVISTAR

Engine : DTA-466

: 145.0 1st version kW : 2400 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 058

Inlet press., bar: 2.80

Overflow

quantity min. 1/h: 175...195

Test nozzle holder

: 1 688 901 101 assembly

Opening

pressure, bar : 207...210

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter

x Wall thickness

x Length mm : 6.00X2.00X600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.95...3.05 : (2.90...3.10) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

Phasing : 0-60-120-180-240-300

Tolerance + - " : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rom: 1200

Rack travel in mm : 12.80...12.90

Del.quantity cm3/: 14.1...14.3

100 s: (13.9...14.5)

Spread cm3 : 0.8

100 s: (1.2)

2nd speed rpm : 350.0 Rack travel in mm : 4.8...5.0

Del.quantity cm3/: 1.5...1.9 100 s: (1.2...2.1)

Spread cm3 : 0.4100 s: (0.6)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3
Speed rpm: 800
Rack travel in mm: 0.30...0.70

Governor spring pre-tension Click setting x : 4.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1200 Aneroid pressure h: 1500

Aneroju p. Del.quantity 1000 : 141.5...143.5 : (139.5...145.5)

8.00 (12.00) Spread cm3

1000

RATED SPEED

1st version Control lever

position degrees: 53...61

Testing:

1st rack travel in: 11.80

rpm : 1260...1270 Speed

2nd rack travel in: 4.00

: 1315...1325 Speed rpm

3rd rack travel in: 4.00 Speed rpm : 1320...1330 4th rack travel in: 1400 Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 14...22

Setting point w/out bumper spring

Speed rpm : 350 Rack travel in mm : 4.9

Testing:

Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 350
Rack travel in mm : 4.80...5.00

Aneroid/Altitude Compensator Test

1st version

Setting

Speed

Pressure

rpm : 500 hPa : 1500 mm : 12.80...12.90 Rack travel mm

Measurement

1/min : 500Speed

1st pressure hPa : -Rack travel in m: 7.50...7.90

2nd pressure hPa : 240 Rack travel in m: 9.00...9.10 3rd pressure hPa : 530 Rack travel in m: 11.40...11.80

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: =

Speed rpm : 500 Del.quantity cm3/: 75.5...79.5 1000 s: (73.5...81.5)

**BREAKAWAY** 

1st version

1mm rack travel less than

full load rack tr: 11.80

Speed

rpm : 1260...1270

STARTING FUEL DELIVERY

Speed rpm

Del.quantity cm3/: 125.0...165.0 1000 s: (120.0...170.0) Rack travel in mm: 20.00...21.00

LOW IDLE

Speed rpm : 350
Rack travel in mm : 4.80...5.00
Del.quantity cm3/ : 15.0...19.0
1000 s: (12.5...21.5)

Spread cm3 : 4.00

1000 s: (6.50)

Start-of-delivery blocking at start of

delivery of cylinder no. 1.

Delivery-valve spring pre-tension = 6.30...6.40 mm.

Permissible alteration from 6.00...6.70

BOSCH INJ. PUMP TEST SPECIFICATIONS BEGINNING OF DELIVERY Note remarks Test pressure, bar: 25...27 Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 20.00...21.00 Test sheet : MB . 26.02.93 : 02.93 Edition Replaces Test oil : ISO-4113 Firing order : 6- 3- 5-Combination no. : 0 402 646 790 Injection pump Phasina : 0-60-120-180-240-300 Pump designation : PE6P12DA32OLS7864 : 0 412 626 879 EP type number Tolerance + - ° : 0.50 (0.75) Governor Governor design. : RQV350...1050PA1052 Time to cyl. no. : 6 Governer nc. : 0 421 814 044 BASIC SETTING Customer—spec. information rpm: 550 1st speed Customer : MERCEDES-BENZ Rack travel in mm : 12.40...12.50 Engine : 0M401 LA, Euro 1 Del.quantity cm3/: 20.0...20.2 : 213.0 : 2100 1st version kW Rated speed 100 s: (19.7...20.5) TEST BENCH REQUIREMENTS Spread cm3 : 0.5Test oil 100 s: (0.9) inlet temp. °C : 38...42 rpm : 350.02nd speed Rack travel in mm : 4.9...5.5 Del.quantity cm3/ : 1.6...2.2 100 s: (1.3...2.5) Overflow valve : 1 417 413 025 Inlet press., bar : 1.50 Spread cm3 : 0.6100 s: (1.0) Overflow quantity min. 1/h: 110...130 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 105 assembly GUIDE SLEEVE TRAVEL 1st speed 350 rpm 1.00...1.50 travel mm pressure, bar : 207...210 2nd speed 453 rpm 2.30...2.80 travel mm Orifice plate 3rd speed : 770 rpm diameter mm : 0,8 4.70...5.20 travet mm 4th speed 1108 rpm 9.40...9.90 travel mm Test lines : 1 680 750 075 GUIDE SLEEVE POSITION Outside diameter Control-lever position x Wall thickness Degree: -1 x Length mm rpm : 1190 : 8.00x2.50x1000 Speed Rack travel in mm : 10.10...12.70 (A) Injection pump setting values Insp. values in parentheses FULL LOAD DELIV. AT FULL LOAD STOP

1st version

4- 1

Set equal delivery quant.

per values \_

Speed rpm : 550 Aneroid pressure h: 1000 Del.quantity : 200.0...202.0 1000 : (197.0...205.0) Spread cm3 : 5.00 1000 : (9.00) RATED SPEED 1st version Control lever position degrees: 99...107 Testing: 1st rack travel in: 11.40 Speed rpm : 1090...1100 2nd rack travel in: 4.00 rpm : 1145...1175 Speed 4th rack travel in: 1300 : 0.00...1.00 Speed rpm LOW IDLE 1 Control lever position degrees: 65...73 Testing: Speed rpm : 250 Minimum rack trave: 8.70 Speed rpm : 350 Rack travel in mm : 5.10...5.30 CONSTANT REGULATION rpm : 380...450 Speed Aneroid/Altitude Compensator Test 1st version Setting : 500 Speed rpm hPa : Pressure Rack travel mm : 10.00...10.30 Measurement 1/min: 500 Speed 1st pressure hPa : 200 Rack travel in m: 10.40...10.50 2nd pressure hPa : 450 Rack travel in m: 11.70...11.90 START CUT-OUT 1/min : 270 (290) Speed FUEL DELIVERY CHARACTERISTICS 1st version

J15

Aneroid pressure h: 1000 rpm 1050 Del.quantity cm3/: 200.0...204.0 1000 s: (187.0...207.0) cm3 : 8.00 1000 s: (12.0) Spread 1000 Aneroid pressure h: 1050 Speed rpm Del.quantity cm3/: 150.0...154.0 \* 1000 s: (147.0...157.0) Aneroid pressure h: -Speed rpm Del.quantity cm3/: 126.0...128.0 1000 s: (123.0...131.0) Spread cm3 : 8.00 1000 s: (12.0) **BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 11.40 rpm : 1090...1100 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/: 170.0...190.0 1000 s: (166.0...194.0)

Remarks:

\* = Set at reduced-delivery stop.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : SCA 9,0 t 1 : 20.02.93 : 02.90 Test sheet Edition Replaces Test oil : ISO-4113 : 0 402 646 848 Combination no. Injection pump Pump designation : PE6P12OA32ORS7138 EP type number : 0 412 626 822 Governor Governor design. : RQV200...1100PA712-3 Governer no. : 0 421 813 637 Customer-spec. information Customer : SAAB-SCANIA Engine : DS9 05 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 019 assembly Opening pressure, bar : 207...210 Orifice plate diameter mm : 0,8 Test lines : 1 680 750 015 Outside diameter x Wall thickness x Length mm : 6.00X1.50X600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY Test pressure, bar: 25...27 Prestroke mm : 4.40...4.50 : (4.35...5.55)
Rack travel in mm : 9.00...12.00

J16

Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 700 Rack travel in mm : 12.20...12.30 Del.quantity cm3/: 16.5...16.7 100 s: (16.2...17.0) Spread cm3 : 0.6100 s: (0.9) rpm : 225.0 2nd speed Rack travel in mm : 4.9...5.3 Del.quantity cm3/: 2.1...2.5 100 s: (-) : 0.3 Spread cm3 100 s: (0.6) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed rpm 0.90...1.30 travel mm 350 2nd speed rpm travel mm 2.50...3.10 3rd speed : 650 rpm 5.40...6.00 travel mm 1145 4th speed rpm 8.90...9.10 travel mm 5th speed 1280 rpm 10.10...10.50 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 Speed rpm : 1120 Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 700 Aneroid pressure h: 900 Del.quantity : 100.0...170.0)

: 1-5-3-6-2-4

Firing order

cm3 : 6.00 1000 : (9.00) Spread

RATED SPEED

1st version Control lever

position degrees: 113...121

Testing:

1st rack travel in: 11.20 Speed rpm : 1140...1150 2nd rack travel in: 4.00

: 1265...1295 Speed rpm 4th rack travel in: 1400

rpm : 0.00...1.00Speed

LOW IDLE 1 Control lever

position degrees: 60...68

Testing:

Speed rpm Minimum rack trave: 6.00

Speed rpm : 225
Rack travel in mm : 4.90...5.10
Rack travel in mm : 2.00
Speed rpm : 300...360

Aneroid/Altitude Compensator Test

1st version Setting

Speed 500 rpm hPa : 900 Pressure

: 12.20...12.30 Rack travel mm

Measurement

Speed 1/min: 500

1st pressure hPa : Rack travel in m: 10.60...11.00
2nd pressure hPa : 360
Rack travel in m: 11.80...11.90
3rd pressure hPa : 240
Rack travel in m: 11.00...11.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900 Speed rpm : 1100

Del.quantity cm3/: 160.0...168.0 1000 s: (158.0...170.0)

Aneroid pressure h: -

Speed : 500 rpm

Del.quantity cm3/: 125.0...129.0 1000 s: (123.0...131.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.20

Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 270.0...320.0
1000 s: (-)

Rack travel in mm : 20.00...21.00

LOW IDLE

rpm.

Rack travel in mm : 4.90...5.10

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders

to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Start-of-delivery setting with ROBO diaphragm.

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Test specifications approved by Scania on 1988-09-21

Start of delivery - engine: 13° before

Firing sequence of engine: 1-5-3-6-2-4.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : SCA 11,1 i1 : 26.02.93 : 02.90 Test sheet Edition Replaces : ISO-4113 Test oil Combination no. : 0 402 646 865 Injection pump Pump designation : PE6P12OA72ORS7020 EP type number : 0 412 626 828 Governor Governor design. : RQV200...1000PA539-8 : 0 421 813 635 Governer no. Customer-spec. information : SAAB-SCANIA Customer : DS11 34 Engine TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 019 assembly Opening pressure, bar : 207...210 Orifice plate : 0,8 diameter mm Test lines : 1 680 750 015 Outside diameter x Wall thickness : 6.00X1.50X600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY

Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. BASIC SETTING 1st speed rpm: 700 Rack travel in mm : 12.90...13.00 Del.quantity cm3/: 20.8...21.0 100 s: (20.5...21.3) cm3 : 0.6Spread 100 s: (0.9) 2nd speed rpm : 225.0 Rack travel in mm : 4.6...5.0 Del.quantity cm3/: 1.8...2.2 100 s: (-) cm3 : 0.3 Spread 100 s: (0.6) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 225 1.20...1.60 350 1st speed rpm travel mm 2nd speed rpm travel mm 2.40...3.00 3rd speed : 650 rpm 4.50...5.10 1045 travel mm 4th speed rpm 8.40...8.60 1150 travel mm 5th speed rpm 9.80...10.20 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1050 Speed Rack travel in mm : 15.20...17.80 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm Aneroid pressure h: 900 Del.quantity 1000 : 208.0...210.0 : (205.0...213.0)

: 1-5-3-6-2-4

Firing order

Test pressure, bar: 25...27

Prestroke mm : 5.00...5.10 : (4.95...5.15)
Rack travel in mm : 9.00...12.00

cm3 : 6.00 1000 : (9.00) Spread

RATED SPEED

1st version Control lever

position degrees: 113...121

Testing: 1st rack travel in: 11.90 Sneed rpm : 1040...1050

Speed rpm : 1135...1165 4th rack travel in: 1250 Speed

rpm : 0.00...1.00 Speed

LOW IDLE 1 Control lever

position degrees: 61...69

Testing:

speed rpm : 125 Minimum rack trave: 5.80

Speed rpm: 225
Rack travel in mm: 4.60...4.80
Rack travel in mm: 2.00
Speed rpm: 340...400

Aneroid/Altitude Compensator Test

1st version

Setting Speed rpm

hPa : 900 Pressure

: 12.90...13.00 Rack travel mm

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 10.50...10.90

2nd pressure hPa : 520 Rack travel in m: 12.30...12.40 3rd pressure hPa : 320 Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900

Speed rpm : 1000 Del.quantity cm3/ : 198.0...206.0 1000 s: (196.0...208.0)

Aneroid pressure h:

Speed : 500 rpm

Del.quantity cm3/: 151.0...155.0 1000 s: (149.0...157.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.90

Speed rpm : 1040...1050

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 275.0...325.0 1000 s: (-)

Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm

Rack travel in mm : 4.60...4.80

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders

to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Start-of-delivery setting with ROBO diaphragm.

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Start of delivery - engine: 13° before

Firing sequence of engine: 1-5-3-6-2-4.

APPLICATION

**Omnibus** 

BOSCH INJ. PUMP TEST SPECIFICATIONS Firing order : 1-5-3-6-2-4 Note remarks : SCA 11,1 j1 : 26.02.93 Test sheet : 0-60-120-180-240-300 Phasing Edition : 02.90 Replaces Tolerance + - ° : 0.50 (0.75) Test oil : ISQ-4113 Time to cyl. no. : 1 Combination no. : 0 402 646 868 BASIC SETTING Injection pump Pump designation : PE6P12OA72ORS7020 1st speed rom: 700 : 0 412 626 828 EP type number Governor Rack travel in mm: 12.90...13.00 : RQ200/1000PA713-5 Governor design. : 0 421 801 444 Governer no. Del.quantity cm3/: 20.8...21.0 Customer-spec. information 100 s: (20.5...21.3) Customer : SAAB-SCANIA Spread cm3 : 0.6Engine : DS11 34 100 s: (0.9) TEST BENCH REQUIREMENTS 2nd speed rpm : 225.0 Rack travel in mm : 4.6...5.0 Del.quantity cm3/ : 1.8...2.2 Test oil inlet temp. °C : 38...42 100 s: (-) Overflow valve cm3 : 0.3Spread : 1 417 413 025 100 s: (0.6) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -2 Speed rpm : 600 Rack travel in mm : 15.20...17.80 : 1 688 901 019 assembly Opening : 207...210 FULL LOAD DELIV. AT FULL LOAD STOP pressure, bar Orifice plate 1st version diameter mm : 0,8 Speed rpm : 700 Aneroid pressure h: 900 Del.quantity : 208.0...213.0) Test Lines : 1 680 750 015 : 6.00 : (9.00) Spread cm3 Outside diameter 1000 x Wall thickness : 6.00X1.50X600 x Length mm RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set equal delivery quant. Setting point: per values Speed rpm : 600 Rack travel in mm : 16.5 BEGINNING OF DELIVERY Testing: Test pressure, bar: 25...27 1st rack travel in: 11.90 Speed rpm: 1045...1060 2nd rack travel in: 4.00 Prestroke mm : 5.00...5.10 : (4.95...5.15)
Rack travel in mm : 9.00...12.00

rpm : 1185...1215

Speed

J20

4th rack travel in: 1300 rom : 0.00...1.00Speed

LOW IDLE 1 Setting point w/out bumper spring

Speed rpm : 225 Rack travel in mm : 4.7

Testing:

speed rpm : 125 Minimum rack trave: 5.80 Speed rpm : 225
Rack travel in mm : 4.60...4.80
Rack travel in mm : 2.00
Speed rpm : 305...345

Aneroid/Altitude Compensator Test

1st version Setting

: 500 Speed rpm : 500 hPa : 900 Pressure

: 12.90...13.00 Rack travel mm

Measurement

1/min: 500 Speed

1st pressure hPa : -Rack travel in m: 10.50...10.90

2nd pressure hPa : 520 Rack travel in m: 12.30...12.40 3rd pressure hPa : 320 Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900 rpm\_ : 1000

Del.quantity cm3/: 198.0...206.0 1000 s: (196.0...208.0)

Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/ : 151.0...155.0 1000 s: (149.0...157.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 11.90 Speed rpm : 1045...1060

Speed

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 275.0...325.0
1000 s: (-)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 225 Rack travel in mm : 4.60...4.80

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Start-of-delivery setting with ROBO diaphragm.

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Start of delivery - engine: 13° before

Firing sequence of engine: 1-5-3-6-2-4.

**APPLICATION** 

**Omnibus** 

BOSCH INJ. PUMP TEST SPECIFICATIONS Firing order : 1-5-3-6-2-4 Note remarks : SCA 11,1 o : 26.02.93 Test sheet Phasing : 0-60-120-180-240-300 Edition : 12.92 Replaces Tolerance + - ° : 0.50 (0.75) : ISO-4113 Test oil Time to cyl. no. : 1 Combination no. : 0 402 646 875 BASIC SETTING Injection pump Pump designation : PE6P120A720RS7126Z 1st speed mpm: 700 EP type number : 0 412 626 830 Governor Rack travel in mm : 12.80...12.90 Governor design. : RQ200/1000PA745-1 Governer no. : 0 421 801 472 Del.quantity cm3/: 20.4...20.6 Customer-spec. information 100 s: (20.1...20.9) Customer : SCANIA Spread cm3 : 0.6Engine : DSC 11 08 100 s: (0.9) TEST BENCH REQUIREMENTS 2nd speed rpm : 225.0 Rack travel in mm : 4.7...5.1 Del.quantity cm3/ : 1.8...2.2 Test oil inlet temp. °C : 38...42 100 s: (-) Overflow valve cm3Spread : 0.3 : 1 417 413 025 100 s: (0.6) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -2 : 1 688 901 019 assembly rpm : 600 Rack travel in mm : 15.20...17.80 Opening : 207...210 pressure, bar FULL LOAD DELIV. AT FULL LOAD STOP Orifice plate 1st version diameter mm : 0,8 Speed rpm Aneroid pressure h: 900 : 204.0...206.0 Del.quantity Test lines : 1 680 750 015 1000 : (201.0...209.0) : 6.00 : (9.00) Spread cm3 Outside diameter 1000 x Wall thickness x Length mm : 6.00x1.50x600 RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set equal delivery quant. Setting point: per values Speed rpm Rack travel in mm: 16.5 BEGINNING OF DELIVERY Testing: Test pressure, bar: 25...27 1st rack travel in: 11.80 Speed rpm : 1045...1060 2nd rack travel in: 4.00 Prestroke mm : 5.00...5.10 : (4.95...5.15)
Rack travel in mm : 9.00...12.00

rpm : 1180...1210

Speed

J22

4th rack travel in: 1300

rpm : 0.00...1.00Speed

LOW IDLE 1

Setting point w/out bumper spring

rpm Rack travel in mm: 4.8

Testing:

Speed rpm: 100
Minimum rack trave: 6.30
Speed rpm: 225
Rack travel in mm: 4.70...4.90
Rack travel in mm: 2.00
Speed rpm: 310...350

Aneroid/Altitude Compensator Test

1st version Setting

: 500 Speed rpm Pressure

hPa : 900 mm : 12.80...12.90 Rack travel mm

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 10.30...10.70

2nd pressure hPa : 470

Rack travel in m: 12.20...12.30 3rd pressure hPa : 320 Rack travel in m: 11.20...11.40

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900 Speed rpm : 1000 Del.quantity cm3/ : 197.0...205.0 1000 s: (195.0...207.0)

Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/ : 142.0...146.0 1000 s: (140.0...148.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr: 11.80 Speed rpm : 1045...1060 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 130.0...170.0 1000 s: (-)

Rack travel in mm : 10.30...10.70

LOW IDLE

Speed rpm : 225 Rack travel in mm : 4.70...4.90

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.
Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

ADDITIONAL INFORMATION

Start-of-delivery setting with ROBO diaphragm.

For comb. with letter index see VDT-I-400/116.

For sealing see VDT-I-400/117.

Start of delivery - engine: 9° before

Firing sequence of engine: 1-5-3-6-2-4.

**APPLICATION** 

**Omnibus** 

: 4.40...4.50 : (4.35...4.55) : 9.00...12.00 : 1- 5- 3- 6- 2- 4 BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm Note remarks Rack travel in mm : Firing order : SCA 11,1 r : 26.02.93 Test sheet Edition : 12.92 Replaces : ISO-4113 Test oil Phasing : 0-60-120-180-240-300 Combination no. : 0 402 646 887 Tolerance + - ° : 0.50 (0.75) Injection pump Time to cyl. no. : 1 Pump designation : PE6P120A720RS7188 : 0 412 626 832 EP type number BASIC SETTING Governor : RQV200...950PA725-7 : 0 421 813 803 Governor design. 1st speed rpm : 700 Governer no. Rack travel in mm : 13.80...13.90 Customer-spec. information Customer Del.quantity cm3/: 25.1...25.3 : SCANIA Engine : DSC 11 23 100 s: (24.8...25.6) TEST BENCH REQUIREMENTS Spread cm3 : 0.8Test oil 100 s: (1.2) inlet temp. °C : 38...42 2nd speed rpm : 250.0 Rack travel in mm : 4.6...5.0 Del.quantity cm3/ : 1.3...1.9 Overflow valve : 1 417 413 025 100 s: (-) Inlet press., bar: 2.30 Spread cm3 : 0.4100 s: (0.8) Overflow quantity min. 1/h: 170...0 (B) Setting of injection pump with governor Test nozzle holder assembly : 1 688 901 104 GUIDE SLEEVE TRAVEL 1st speed rpm **Opening** 1.20...1.60 travel mm : 250...253 350 pressure, bar 2nd speed rpm travel mm 2.40...3.00 Orifice plate 3rd speed : 650 rpm diameter mm : 0,7 travel mm 4.50...5.10 4th speed : 1045 rpm travel mm : 8.40...8.60 Test lines : 1 680 750 008 5th speed 1125 rpm : 9.30...9.70 travel mm Outside diameter x Wall thickness GUIDE SLEEVE POSITION x Length mm : 6.00x2.00x600 Control-lever position Degree: -1 rpm : 1150 (A) Injection pump setting values Speed Insp. values in parentheses Rack travel in mm : 7.00...12.00 Set equal delivery quant. per values FULL LOAD DELIV. AT FULL LOAD STOP BEGINNING OF DELIVERY 1st version Test pressure, bar: 25...27 Speed rpm : 700

Aneroid pressure h: 1500

Del.quantity : 251.0...253.0 1000 : (248.0...256.0) Spread cm3 : 8.00 1000 : (12.00)

RATED SPEED

1st version control lever position degrees: 110...118

Testing: 1st rack travel in: 12.80 Speed rpm : 990...1000 2nd rack travel in: 4.00 : 1110...1140 Speed nom 4th rack travel in: 1250 rpm : 0.00...1.00Speed

LOW IDLE 1 Control lever position degrees: 60...68

Testing: Speed rpm : 125 Minimum rack trave: 6.20 : 250 Speed rpm Rack travel in mm : 4.60...4.80 Rack travel in mm : 2.00

: 370...430 Speed rom Aneroid/Altitude

Compensator Test

1st version Setting Speed

rpm : 500 hPa : 1500 Pressure Rack travel mm : 13.80...13.90

Measurement

1/min: 500 Speed

1st pressure hPa : Rack travel in m: 10.20...10.60
2nd pressure hPa : 440 Rack travel in m: 12.00...12.10
3rd pressure hPa : 270
Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500 Speed rpm : 950 Del.quantity cm3/: 228.0...236.0 1000 s: (226.0...238.0)

Aneroid pressure h: -

Speed rpm : 500 Del.quantity cm3/ : 152.0...154.0 1000 s: (149.0...157.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 12.80 Speed rpm : 990...1000

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...180.0
1000 s: (-)
Rack travel in --

LOW IDLE

Speed rpm : 250 Rack travel in mm : 4.60...4.80

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

Start-of-delivery setting with RCBO diaphragm.

**APPLICATION** 

Nevy

J25

Prestroke mm : 4.40...4.50 : (4.35...4.55) Rack travel in mm : 9.00...12.00 BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : 1-5-3-6-Firing order Test sheet Edition SCA 26.02.93 12.92 Replaces : ISO-4113 Test oil Phasing : 0-60-120-180-240-300 Combination no. : 0 402 646 910 Tolerance + - ° : 0.50 (0.75) Injection pump Time to cyl. no. : 1 Pump designation : PE6P120A320RS7138 EP type number : 0 412 626 822 BASIC SETTING Governor : RQV200...1100PA712-5 : 0 421 813 951 Governor design. 1st speed rpm: 700 Governer no. Rack travel in mm : 13.10...13.20 Customer-spec. information Customer : SCANIA Del.quantity cm3/: 17.9...18.1 Engine : DS9 08 100 s: (17.6...18.4) TEST BENCH REQUIREMENTS Spread cm3 : 0.8Test oil 100 s: (1.2) inlet temp. °C : 38...42 rpm : 250.0 2nd speed Rack travel in mm : 4.5...4.9 Del.quantity cm3/ : 1.3...1.9 100 s: (-) Overflow valve : 1 417 413 025 Inlet press., bar: 2.30 Spread cm3 : 0.4100 s: (0.8) Overflow quantity min. 1/h: 170...0 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 104 assembly GUIDE SLEEVE TRAVEL 1st speed **CDW** 0.90...1.30 Opening travel mm : 250...253 pressure, bar 350 2nd speed 2.50...3.10 travel mm Orifice plate 3rd speed 650 rpm diameter mm : 0,7 5.40...6.00 travel mm 1145 4th speed rpm 8.90...9.10 1280 travel mm Test lines : 1 680 750 008 5th speed rpm : 10.10...10.50 travel mm Outside diameter x Wall thickness GUIDE SLEEVE POSITION x Length mm : 6.00x2.00x600 Control-lever position Degree: -1
Speed rpm : 1130
Rack travel in mm : 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values FULL LOAD DELIV. AT FULL LOAD STOP BEGINNING OF DELIVERY 1st version Test pressure, bar: 25...27 rpm : 700 Speed Aneroid pressure h: 900

Del.quantity : 179.0...181.0 1000 : (176.0...184.0) Spread cm3 : 8.00 1000 : (12.00) RATED SPEED 1st version Control lever position degrees: 114...122 Testing: 1st rack travel in: 12.10
Speed rpm: 1140...1150
2nd rack travel in: 4.00
Speed rpm: 1275...1305
4th rack travel in: 1400 : 0.00...1.00 Speed rom LOW IDLE 1 Control lever position degrees: 60...68 Testing: Speed rpm : 150 Speed rpm: 150
Minimum rack trave: 5.80
Speed rpm: 250
Rack travel in mm: 4.50...4.70
Rack travel in mm: 2.00
Speed rpm: 310...370 Aneroid/Altitude Compensator Test 1st version Setting rpm : 500 hPa : 900 Speed man Pressure : 13.10...13.20 Rack travel mm Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 9.90...10.30 2nd pressure hPa : 480 Rack travel in m: 12.30...12.40 3rd pressure hPa : 220 Rack travel in m: 10.70...10.90 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 900 Speed rpm : 1100 Del.quantity cm3/ : 162.0...170.0 1000 s: (160.0...172.0)

Speed rpm : 500 Del.quantity cm3/ : 114.0...118.0 1000 s: (112.0...120.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.10 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 120.0...140.0 1000 s: (-) Rack travel in mm : 9.90...10.30

LOW IDLE

Speed rpm : 250 Rack travel in mm : 4.50...4.70

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

Start-of-delivery setting with ROBO diaphragm.

J27

Aneroid pressure h: -

Rack travel in mm : 9.00...12.00 Firing order : 1-5- 3- 6- 2- 4 BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet SCA : 26.02.93 : 12.92 Edition Phasing : 0-60-120-180-240-300 Replaces : ISO-4113 Test oil Tolerance + - ° : 0.50 (0.75) Combination no. : 0 402 645 928 Time to cyl. no. : 1 Injection pump BASIC SETTING Pump designation : PE6P120A320RS7138 EP type number : 0 412 626 822 rpm: 700 1st speed Governor Governor design. : RQV350...1100PA795 Rack travel in mm : 12.20...12.30 : 0 421 813 914 Governer no. Del.quantity cm3/: 16.5...16.7 Customer—spec. information 100 s: (16.2...17.0) Customer : SCANIA Spread cm3 : 0.6Engine : DS9 05 100 s: (0.9) TEST BENCH REQUIREMENTS rpm : 350.0 2nd speed Rack travel in mm : 4.9...5.3 Del.quantity cm3/ : 2.0...2.4 Test oil inlet temp. °C : 38...42 100 s: (-) cm3 : 0.3 100 s: (0.6) Overflow valve Spread : 1 417 413 025 Inlet press., bar: 1.50 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 019 assembly GUIDE SLEEVE TRAVEL 2nd speed rpm 1.30...1.70 Opening travel mm : 207...210 3rd speed 650 pressure, bar rpm 4.10...4.70 1150 7.80...8.00 1260 travel mm Orifice plate 4th speed rpm diameter mm : 0,8 travel .mm 5th speed rpm 8.80...9.20 travel mm Test lines : 1 680 750 015 GUIDE SLEEVE POSITION Outside diameter Control-Lever position x Wall thickness Degree: -1 rpm : 1230 x Length mm : 6.00x1.50x600 Speed Rack travel in mm : 15.20...17.80 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. FULL LOAD DELIV. AT FULL LOAD STOP per values 1st version Speed rpm : 700 BEGINNING OF DELIVERY Aneroid pressure h: 900 Anerow Del.quantity 1000 Test pressure, bar: 25...27 : 165.0...167.0 : (162.0...170.0)

cm3

1000

Spread

: 6.00

: (9.00)

Prestroke mm

: 4.40...4.50

: (4.35...4.55)

RATED SPEED

1st version Control Lever

position degrees: 99...107

Testing:

1st rack travel in: 11.20

rpm : 1140...1150 Speed

2nd rack travel in: 4.00 Speed rpm : 1240...1270 4th rack travel in: 1400 Speed rpm : 0.00...1.00

LOW IDLE 1

Control lever

position degrees: 68...76

Testing:

Speed rpm: 250
Minimum rack trave: 7.50
Speed rpm: 350
Rack travel in mm: 4.90...5.10
Rack travel in mm: 2.00
Speed rpm: 370...430

Aneroid/Altitude Compensator Test

1st version Setting

Speed rpm hPa : 500

: 900 Pressure

: 12.20...12.30 Rack travel mm

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 10.60...11.00 2nd pressure hPa : 360 Rack travel in m: 11.80...11.90 3rd pressure hPa : 240 Rack travel in m: 11.00...11.20

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 900 Speed rpm : 1100

Speed rpm : 1100 Del.quantity cm3/ : 163.0...171.0 1000 s: (161.0...173.0)

Aneroid pressure h: -

: 500 Speed rpm

Del.quantity cm3/ : 125.0...129.0 1000 s: (122.0...132.0)

**BREAKAWAY** 

1st version

1mm rack travel less than

full load rack tr: 11.20 peed rpm : 1140...1150 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 270.0...320.0 1000 s: (-) Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 350 Rack travel in mm : 4.90...5.10

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders

to 2.9...3.1 mm.

Start-of-delivery setting with ROBO

diaphraam.

4.40...4.50 (4.35...4.55) 9.00...12.00 1-5-3-6-BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm Note remarks Rack travel in mm: Firing order Test sheet : SCA : 26.02.93 : 01.93 Edition Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 : 0 402 646 938 Combination no. Tolerance + - ° : 0.50 (0.75) Injection pump Time to cyl. no. : 1 Pump designation : PE6P120A720RS71880 EP type number : 0 412 626 846 BASIC SETTING Governor Governor design. : RQ200/950PA745-3 1st speed rpm: 700 Governer no. : 0 421 801 579 Rack travel in mm : 12.70...12.89 Customer spec. information Customer Del.quantity cm3/: 21.9...22.1 : SCANIA Engine : DSC 11 21 100 s: (21.6...22.4) TEST BENCH REQUIREMENTS Spread cm3 : 0.8Test oil 100 s: (1.2) inlet temp. °C : 38...42 2nd speed rpm : 250.0Overflow valve Rack travel in mm : 4.6...5.0 : 1 417 413 025 Del.quantity cm3/: 1.5...1.9 100 s: (-) cm3 : 0.4 Inlet press., bar: 2.30 Spread 100 s: (0.8) Overflow quantity min. 1/h: 170...0 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -2 assembly : 1 688 901 104 rpm : 600 Speed Rack travel in mm : 15.20...17.80 Opening pressure, bar : 250...253 FULL LOAD DELIV. AT FULL LOAD STOP Orifice plate 1st version diameter mm : 0,7 Speed rpm Aneroid pressure h: 1500 : 219.0...221.0 Del.quantity Test lines : 1 680 750 008 1000 : (216.0...224.0) : 8.00 cm3 Spread Outside diameter x Wall thickness x Length mm 1000 : (12.00) : 6.00x2.00x600 RATED SPEED (A) Injection pump setting values 1st version Insp. values in parentheses Set equal delivery quant. Setting point: per values Speed rpm Rack travel in mm: 16.5 BEGINNING OF DELIVERY Test pressure, bar: 25...27 Testing:

1st rack travel in: 11.70

2~

Speed rpm : 995...1010 2nd rack travel in: 4.00 Speed rpm : 1085...1115 4th rack travel in: 1250 Speed rpm : 0.00...1.00

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm : 250 Rack travel in mm : 4.7

Testing:

speed rpm : 125 Minimum rack trave: 6.20 Speed rpm : 250 Rack travel Rack travel in mm: 4.60...4.80 Rack travel in mm: 2.00 Speed rpm: 330...370

Aneroid/Altitude Compensator Test

1st version Setting

Speed : 500 rpm hPa : 1500 Pressure

Rack travel mm : 12.70...12.80

Measurement

1/min: 500 Speed

1st pressure hPa :-

Rack travel in m: 10.20...10.60

2nd pressure hPa : 440 Rack travel in m: 12.00...12.10

3rd pressure hPa : 270 Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500

Speed rpm : 950
Del.quantity cm3/: 202.0...210.0
1000 s: (200.0...212.0)

Ameroid pressure h: -

Speed rpm : 500
Del.quantity cm3/: 151.0...155.0
1000 s: (149.0...157.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 11.70 Speed rpm : 995...1010 Speed

**K03** 

## STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 169.9...200.0
1000 s: (-)
Rack travel in mm : 10.20...10.60

LOW IDLE

Speed rpm : 250 Rack travel in mm : 4.60...4.80

Remarks:

Dalivery-valve spring pre-tension 3.2...3.4 mm. Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

Start-of-delivery setting with ROBO diaphragm.

APPLICATION

Omnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks CUM 8,3 a 8 20.04.93 30.9.88 Test sheet Edition Replaces Test oil : ISO-4113 Combination no. : 9 400 230 111 Injection pump Pump designation : PES6A100D320/3RS2691 : 9 410 230 030 EP type number Governor Governor design. : RSV400...1100A0c2190 : 9 420 234 174 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6CT830 : 134.2 1st version kW Rated speed : 2200 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 017 assembly Opening : 207...210 pressure, bar Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

: 2.80...2.90 : (2.75...2.95) : 10.50 : 1- 5- 3- 6-Prestroke mm Rack travel in mm : 3- 6- 2- 4 Firing order : 0-60-120-180-240-300 Phasing Phasing Tolerance + - ° : 0.50 (0.75) Time to cyl. no. BASIC SETTING 1st speed rpm: 1100 Rack travel in mm : 11.20...11.30 Del.quantity cm3/: 10.1...10.3 100 s: (9.9...10.5) Spread cm3 : 0.3100 s: (0.6) 2nd speed rpm : 400 Rack travel in mm : 7.4...7.6 Del.quantity cm3/: 2.8...3.2 100 s: (2.5...3.4) Spread cm3 : 0.3 100 s: (0.5) GUIDE SLEEVE POSITION Control-lever position Degree: -3 **Lbu** : 800 Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : 5.75FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed 1100 rpm 101.0...103.0 (99.0...105.0) 3.50 Del.quantity 1000 : 3.50 : (6.00) Spread cm31000 RATED SPEED 1st version Control lever position degrees: 49...57

Test pressure, bar: 27...29

K04

BEGINNING OF DELIVERY

Testing: 1st rack travel in: 10.20 Speed rpm : 1140...1150 2nd rack travel in: 4.00 : 1210...1240 Speed ripm 3rd rack travel in: 4.00 : 1215...1245 Speed rpm

4th rack travel in: 1300 Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 29...37 Setting point w/out bumper spring

: 400 rpm Rack travel in mm: 7.0

Testing:

Speed rpm Minimum rack trave: 19.00 Speed : 400 r, pm

Rack travel in mm : 7.40...7.60 Rack travel in mm : 2.00 : 520...580 Speed ron

TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 11.20...11.30 2nd speed rpm : 750 Rack travel in m: 12.00...12.20

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750 Del.quantity cm3/ : 110.5...114.5 1000 s: (108.5...116.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.20 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

LOW IDLE

: 400 Speed rom

K05

Rack travel in mm: 7.40...7.60 Del.quantity cm3/: 28.0...32.0 1000 s: (25.5...34.5) Spread cm3: 3.50 1000 s: (5.50)

Remarks:

: C.D.C. # 3911545

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : CUM 5,9 w 2 : 13.05.93 : 21.09.92 Test sheet Edition Replaces Test oil : ISO-4113 Combination no. : 0 402 736 811 Injection pump Pump designation : PES6P110A120RS7213 : 0 412 716 804 EP type number Governor Governor design. : RQV400...1250PA964 : 0 421 815 255 Governer no. Customer-spec. information

Customer : C.D.C. Engine : 6BTA-A 1st version kW : 147.0 : 2500 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 115...125

Test nozzle holder

: 1 688 901 101 assembly

Opening

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 008

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values \_

BEGINNING OF DELIVERY Test pressure, bar: 22...24

Prestroke mm : 4.35...4.45 : (4.30...4.50)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4

Phasing : 0-60-720-780-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1250

Rack travel in mm : 14.80...14.90

Det.quantity cm3/: 15.8...16.0

100 s: (15.5...16.3)

Spread cm3 : 0.5

100 s: (0.9)

rpm : 400.02nd speed Rack travel in mm: 5.5...5.7 Del.quantity cm3/: 3.2...3.8 100 s: (3.0...4.0)

: 0.8 Spread cm3100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

1st speed 400 man 1.60...1.80 travel mm 2nd speed 600 rpm

travel mm 2.80...3.30 3rd speed 1300 rpm

travel mm : 7.20...7.40 4th speed : 1500 rpm : 8.90...9.30 travel mm

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

speed rpm : 1250 Aneroid pressure h: 1200

Aneroid P.C. Del.quantity 1000 : 158.5...160.5 : (155.5...163.5)

5.00 Spread cm31000 (9.00)

#### RATED SPEED

1st version Control lever

position degrees: 56...64

Testing:

1st rack travel in: 13.80 rpm : 1290...1300 Speed

2nd rack travel in: 4.00

Speed rpm: : 1460...1490 4th rack travel in: 1600 Speed rpm: 0.00...1.00

LOW IDLE 1 Control lever

position degrees: 12...20

Testing:

Speed rpm : 275 Minimum rack trave: 7.20 Speed

Speed rpm : 400 Rack travel in mm : 5.50...5.70

CONSTANT REGULATION

rpm : 325...520 Speed

TORQUE CONTROL

Dimension a mm

Torque control curve - 1st version

1st speed rpm : 1250
Rack travel in m: 14.80...14.90
2nd speed rpm : 800
Rack travel in m: 13.20...13.40

Aneroid/Altitude Compensator Test

1st version Setting

Speed rpm hPa Pressure 1200

: 14.80...14.90 Rack travel mm

Measurement

1/min: 1250 Speed

1st pressure hPa : -

Rack travel in m: 8.20...8.60 2nd pressure hPa : 410

Rack travel in m: 10.60...10.70 3rd pressure hPa : 755

Rack travel in m: 13.70...14.10

START CUT-OUT

Speed 1/min : 290 (300)

K07

#### FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1200

Speed cm3 : 300
Del.quantity cm3/: 156.5...162.5
1000 s: (153.5...165.5)
Spread cm3 : 8.00

1000 s: (12.0)

Aneroid pressure h: -

Speed rpm : 500 bel.quantity cm3/ : 90.0...94.0 1000 s: (88.0...96.0)

#### **BREAKAWAY**

1st version

1mm rack travel less than

full load rack tr: 13.80

Speed : 1290...1300 rpm

STARTING FUEL DELIVERY

: 100 Speed rpm

Del.quantity cm3/: 135.0...175.0 1000 s: (130.0...180.0)

Rack travel in mm: 11.90...12.90

LOW IDLE

Speed rpm : 400 Rack travel in mm : 5.50...5.70 Del.quantity cm3/ : 32.0...38.0 1000 s: (30.0...40.0)

Spread

cm3 : 8.00 1000 s: (12.00)

Remarks:

Start-of-delivery mark 6° cam angle after start of delivery cyl. 1

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 04.06.93 replaces Calibrating oil : ISO-4113 Injection pump : VE6/12F1400R173 Type number : 0 460 426 038 Customer Part-No. : 390 7667 Customer-specific information Customer Engine : 6 BT -590 TEST BENCH REQUIREMENTS Calibrating-oil return temp. with thermometer : 40.00...48.00 : 42.00...50.00 Electronically Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 027 assembly Openina | bar: 250.00...253.00 Pressure Perforated-plate diameter mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840 x Length Start of delivery mm: 0.3 Prestroke (from BDC): +-0.02(0.04)Start of delivery block Piston stroke mm: 1.6 mm: +0.02(0.06): D Outlet Injection pump setting values Test specifications in parentheses Timing-device travel 1/min: 1100 Speed

**K08** 

Charge press. hPa: 750 Setting value mm: 2.10...2.50 Shutoff electromagnet Volt: 24 Supply-pump pressure Speed 1/min: 1100 Charge press hPa: 750 Setting value bar: 4.30...4.90 Shutoff electromagnet Volt: 24 Full-load del. with charge press.: 1/min: 1100 Speed Charge press. hPa: 750 Del. quartity cm3/ 1000s.: 86.00...87.00 Shutoff electromagnet Volt: 24 Dispersion cm3/: 4.0 1000S.: (4.5) Full-load del. w/out charge press.: 1/min: 500 Del. quantity cm3/ 1000S.: 73.50...74.50 Shutoff electromagnet Volt: 24 Low-idle speed regulation 1/min: 375 Speed Del. quantity cm3/ 1000S.: 20.00...26.00 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000S.: (7.0) Full-load speed regulation Speed 1/min: 1600 Charge press hPa: 750 Del. quantity cm3/ 1000s.: 32.00...38.00 Shutoff electromagnet Volt: 24 Start: Speed 1/min: 100 Del. quantity cm3/: 97.00...137.00 mind 1000S.: 97.00 mind Shutoff electromagnet Volt: 24 Inspection pump test specifications

Test specifications	in parentheses +		
Timing-device charact	teristic:	1nd speed 1/min: Charge-air pressure	750* -setting
2nd speed 1/min:	1400	point hPa:	300
Charge press hPa: 3	750 +	LDA-stroke mm:	4.5
TD travel mm: a	2.903.70	Shutoff	
mm:	(2.604.00)	electromagnet Volt:	24
Shutoff	<del> </del>	Del. quantity cm3/:	80.0081.00
electromagnet Volt: 2	24 🕂	10005.:	(76.5084.50)
3rd speed 1/min:	<u>110</u> 0 +	2nd speed 1/min:	1750
Charge press hPa:	750 +	Charge press. hPa:	750
TD travel mm: 2	2.102.50 +	Shutoff	
	(1.603.00)	electromagnet Volt:	24
Shutoff	· †	Del. quantity_cm3/:	0.003.00
electromagnet Volt: 2	£4 †	7000\$.:	(0.003.00)
4th speed 1/min: 9		5th speed 1/min:	
Charge press hPa:	(50 4 20 †	Charge press. hPa:	750
TD travel mm: (	U.4U1.2U +	Shutoff	24
Shutoff	(0.101.50)	electromagnet Volt:	24 72 00 70 00
electromagnet Volt: 2	3/L	Del. quantity cm3/:	32.0038.00
etectromagnet vott: a	<sup>24</sup> †	Oth speed 1 (min.	(29.0041.00)
Supply-pump pressure	characteristic:	9th speed 1/min:	750
amphe's built by essure	characteristic.	Charge press. hPa: Shutoff	750
1st speed 1/min:	$\mathbf{I}$	electromagnet Volt:	2/.
Charge press. hPa:	750 I	Del. quantity cm3/:	70 50 82 50
Supply-pump	135	10000 ·	(78.0084.00)
pressure bar: 2	2.002.60	10th speed 1/min:	
Shutoff	1	Charge press. hPa:	
electromagnet Volt: 2	24 🗼	Shutoff	1 30
2nd speed 1/min:	īioo ↓	electromagnet Volt:	24
Charge press. hPa: 7		Del. quantity cm3/:	82,5085.50
Supply-pump	+	1000s.:	(80.5087.50)
pressure bar: 4	4.304.90	12th speed 1/min:	1100
Shutoff	+	Charge press. hPa:	750
electromagnet Volt: 2	24	Shutoff	
3rd speed 1/min:		electromagnet Volt:	24
Charge press. hPa: 7	750 +	Del. quyntity_cm3/:	86.0087.00
Supply-pump	+	1000s.:	(83.5089.50)
	5.606.20	18th speed 1/min:	
Shutoff	<u>,</u>	Charge press. hPa: Shutoff	~
electromagnet Volt: 2	24 †	Shutott	2/
Overlow quantity at o	overflou valve:	electromagnet Volt:	72 EN 7/ EN
over tow qualitity at t	Joer Low valve.	Del. quantity cm3/:	(70.0078.00)
1st speed 1/min: 5	I	10003	(10.0070.00.
Charge press. hPa:		Mech. shutoff:	
Shutoff	1	Mech. Abstellung:	
electromagnet Volt: 2	24 🗼	ricon. Absolutions.	
	41.7083.40	1st speed 1/min:	1400
quantity cm3/10s: (	(26.7098.40)	Del. quantity cm3/:	0.003.00
2nd speed 1/min: 1	1400 +	1000s.:	(0.003.00)
Charge press. hPa: 7	750 +	Shutoff	
Shutoff	+	electromagnet volt:	24
electromagnet Volt: 2	<del>-</del>	-	
Overflow : 5	55.60139.00	Electr. shutoff:	
quantity cm3/10s: (	(40.60154.00)		
Dald	+	1st speed 1/min:	375
Delivery-quant. and b	oreakaway char.: +		

Del. quantity cm3/: 0.00...3.00 1000s.: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1st speed 1/min: 375 Shutoff electromagnet Volt: 24
Del. quantity cm3/: 20.00...26.00
1000S.: (18.00...28.00)
Dispersion cm3/: 5.5
1000S.: (7.0) 2nd speed 1/min: 450 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...4.00 1000S.: (0.00...4.00) Automatic starting fuel delivery: 1st speed 1/min: 130 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 97.00...137.00 1000S.: (97.00...137.00) 1/min: 200 2nd speed Shutoff electromagnet Volt: 24 Del. quantity cm3/: 45.00...85.00 1000s.: (45.00...85.00) 4th speed 1/min: 100 Shutoff electromagnet Volt: 24
Del. quantity cm3/: 97.00...137.00
10005.: (97.00...137.00) Shutoff electromagnet: Cut-in min voltage : 20.0 : 24.0 Rated voltage Mounting and assembly dimensions: Designation K mm: mm: 5.0...5.4 mm: 1.3...1.7 KF MS SVS max. mm: 2.4 mm: 4.5 LDA stroke Remarks: Operate control lever after each manifold pressure compensator pressure

\* Correction at adjusting nut

K10

change.

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : CDC : 04.06.93 replaces Calibrating oil : ISO-4113 : VE6/12F1100R159-2 Injection pump : 0 460 426 042 Type number Customer Part-No.: 3907664 Customer-specific information Customer : CDC Engine : 6BT-5.9 IND. TEST BENCH REQUIREMENTS Calibrating-oil return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar: 0.30...0.40 Calibrating nozzle-holder : 1 688 901 016 assembly Opening Fressure bar: 207.00...210.00 Perforated-plate diameter mm: 0.5 Test inj. tubing : 1 680 750 017 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length Start of delivery Prestroke mm: 0.3 (from BDC): +-0.02(0.04) Start of delivery block Piston stroke mm: 1.5 mm: +-0.02(0.06)Outlet Injection-pump setting values Test specifications in parentheses Timing-device travel

1/min: 750

Setting value mm: 3.10...3.50 Shutoff electromagnet Volt: 24 Supply-pump pressure Speed 1/min: 750 Setting value bar: 3.60...4.20 Shutoff electromagnet Volt: 24 Full-load del. w/out charge press.: 1/min: 900 Del. quantity cm3/ 1000s.: 82.00...83.00 Shutoff electromagnet Volt: 24 Dispersion cm3/: 4.0 1000S.: (4.5) Low-idle speed regulation 1/min: 375 Del. quantity cm3/ 1000S.: 22.00...28.00 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000S.: (7.0) Full-load speed regulation 1/min: 1220 Speed Del. quantity cm3/ 1000s.: 34.00...40.00 Shutoff electromagnet Volt: 24 Start: Speed 1/min: 100 Del. quantity cm3/: 100.00...140.00 mind 1000s.: 100.0 Shutoff electromagnet Volt: 24 Inspection pump test specifications Test specifications in parentheses Timing-device characteristic: 2nd speed 1/min: 1100 mm: 5.10...5.90 mm: (4.80...6.20) TD travel Shutoff electromagnet Volt: 24
3rd speed 1/min: 750
TD travel mm: 3.10...3.50
mm: (2.60...4.00)

K11

Speed

Shutoff electromagnet Volt: 24 4th speed 1/min: 500 TD travel mm: 1.202.00 mm: (0.902.30) Shutoff electromagnet Volt: 24	Del. quyntity cm3/: 82.0083.00 1000\$.: (79.5085.50) 20th speed 1/min: 500 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 77.0085.00 1000\$.: (75.0087.00)
Supply-pump pressure characteristic:	Mech. shutoff: Mech. Abstellung:
1st speed 1/min: 500 Supply-pump	1st speed 1/min: 1100
pressure bar: 2.603.20 Shutoff	+ Del. quantity cm3/: 0.003.00 + 1000S.: (0.003.00)
electromagnet Volt: 24 2nd speed 1/min: 750 Supply-pump	+ Shutoff + electromagnet volt: 24
pressure bar: 3.604.20 Shutoff	Electr. shutoff:
electromagnet Volt: 24 3rd speed	1st speed 1/min: 375 Del. quantity cm3/: 0.003.00 1000S.: (0.003.00)
pressure bar: 5.005.60 Shutoff	+ Shutoff + electromagnet volt: -
electromagnet Volt: 24	Idle delivery:
Overlow quantity at overflow valve:  1st speed   1/min: 500	1st speed 1/min: 375
Shutoff electromagnet Volt: 24 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 1100 Shutoff electromagnet Volt: 24 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00)	Shutoff electromagnet Volt: 24  Del. quantity cm3/: 22.0028.00  1000s.: (20.0030.00)  Dispersion cm3/: 5.5  1000s.: (7.0)  4th speed 1/min: 450  Shutoff electromagnet Volt: 24  Del. quantity cm3/: 0.003.00
Delivery—quant. and breakaway char.:	1000S.: (0.003.00)  Automatic starting fuel delivery:
2nd speed 1/min: 1280 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.003.00 1000S.: (0.003.00) 5th speed 1/min: 1220 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 34.0040.00 1000S.: (31.0043.00) 9th speed 1/min: 1100 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 75.0078.00 1000S.: (73.5079.50)	1st speed 1/min: 130 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 100.00150.00 1000S.: (100.00150.00)  2nd speed 1/min: 200 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 45.0085.00 1000S.: (45.0085.00)  4th speed 1/min: 100 Shutoff electromagnet Volt: 24
12th speed 1/min: 900 Shutoff electromagnet Volt: 24	Del. quantity cm3/: 100.00140.00 1000s.: (100.00140.00)

# Shutoff electromagnet:

Cut-in min voltage Rated voltage : 20.0 : 24.0

# Mounting and assembly dimensions:

Designation K KF MS SVS max. mm: -mm: 5.2...5.6 mm: 1.5...1.9 mm: 1.5

Remarks:

BOSCH-INJ. -PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet Edition

: 04.06.93 replaces

Calibrating oil : ISO-4113

: VE6/12F1150R159-3 Injection pump

Type number : 0 460 426 043 Customer Part-No. : 3907663

Customer-specific information

Customer : CDC

Engine : 6BT-5.9 IND.

TEST BENCH REQUIREMENTS

Calibrating oil °C return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 016 assembly

Opening

bar: 207.00...210.00 Pressure

Perforated plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length mm: 840

Start of delivery

Prestroke mm: 0.3

(from BDC): + 0.02(0.04)

Start of delivery block

Piston stroke mm: 1.5 mm: ←0.02(0.06)

: D Outlet

Injection-pump setting values Test specifications in parentheses

Timing-device travel

1/min: 900 Speed

K14

Setting value mm: 4.30...4.70 Shutoff

electromagnet Volt: 24

Supply-pump pressure

Speed 1/min: 900

Setting value bar: 4.40...5.00

Shutoff

electromagnet Volt: 24

Full-load del. w/out charge press.:

1/min: 900

Del quantity cm3/ 1000s.: 81.50...82.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 4.0

1000s.: (4.5)

Low-idle speed regulation

1/min: 375 Speed

Del. quantity cm3/ 1000s.: 18.50...24.50

Shutoff.

electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

Speed 1/min: 1230

Del. quantity cm3/ 1000s.: 30.00...36.00

Shutoff

electromagnet Volt: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 100.00...140.00 mind 1000s.: 100.0

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed

1/min: 1150 mm: 5.60...6.40 mm: (5.30...6.70) TD travel

Shutoff

electromagnet Volt: 24 3rd speed 1/min: 900

TD travel

mm: 4.30...4.70 mm: (3.80...5.20)

Shutoff	† Del. quyntity cm3/: 81.5082.50
electromagnet Volt: 24	1000S.: (79.0085.00)
4th speed 1/min: 500	† 20th speed 1/min: 500
TD travel mm: 1.202.00	+ Shutoff
mm: (0.902.30)	+ electromagnet Volt: 24
Shutoff	+ Del. quantity cm3/: 78.5086.50
electromagnet Volt: 24	+ 1000\$.: (76.5088.50)
Supply-pump pressure characteristic:	Hech. shutoff:
<b>A</b>	+ Mech. Abstellung:
1st speed 1/min: 500	+
Supply-pump	+ 1st speed 1/min: 1250
pressure bar: 2.703.30	+ Del. quantity cm3/: 0.003.00
Shutoff	+ 1000S.: (0.003.00)
electromagnet Volt: 24	+ Shutoff
2nd speed 1/min: 900	+ electromagnet volt: 24
Supply-pump	†
pressure bar: 4.405.00	† Electr. shutoff:
Shutoff	+
electromagnet Volt: 24	+ 1st speed 1/min: 360
3rd speed 1/min: 1150	+ Del. quantity cm3/: 0.003.00
Supply-pump	10008.: (0.003.00)
pressure bar: 5.406.00	+ Shutoff
Shutoff	+ electromagnet volt: -
electromagnet Volt: 24	† · . ·
A	† Idle delivery:
Overlow quantity at overflow valve:	+
Antonomial Almino FOO	† 1st speed 1/min: 375
1st speed 1/min: 500	+ Shutoff
Shutoff 2/	+ electromagnet Volt: 24
electromagnet Volt: 24	+ Del. quantity cm3/: 18.5024.50
Overflow : 41.7083.40	1000 <u>S</u> .: (16.5026.50)
quantity cm3/10s: (26.7098.40)	+ Dispersion cm3/: 5.5
2nd speed 1/min: 1150	+ 1000s.: (7.0)
Shutoff	+ 4th speed 1/min: 450
electromagnet Volt: 24 Overflow : 55.60139.00	+ Shutoff
Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00)	+ electromagnet Volt: 24
quantity (1157 105; (40.60154.00)	+ Del. quantity cm3/: 0.003.00
Della come water and knowledge about	10005.: (0.003.00)
Delivery-quant. and breakaway char.:	T Automotic stanting first duling
	+ Automatic starting fuel delivery:
2nd speed 1/min: 1290	1st speed 1/min: 130
Shutoff	Plant CC
electromagnet Volt: 24	† Shutott
Del. quantity cm3/: 0.003.00	+ electromagnet Volt: 24 + Del. quantity_cm3/: 100.00150.00
10008.: (0.003.00)	10008:: (100.00150.00)
5th speed 1/min: 1230	10005 (100.00150.00)
Shutoff	2nd speed 1/min: 200
electromagnet Volt: 24	+ Shutoff
Del. quantity cm3/: 30.0036.00	+ electromagnet Volt: 24
1000S.: (27.0039.00)	Del. quantity_cm3/: 45.0085.00
9th speed 1/min: 1150	1000s.: (40.0080.00)
Shutoff	1
electromagnet Volt: 24	+ 4th speed 1/min: 100
Del. quantity cm3/: 74.0077.00	+ Shutoff
1000s.: (72.5078.50)	electromagnet Volt: 24
12th speed 1/min: 900	Del. quantity cm3/: 100.00140.00
Shutoff	+ 1000S.: (100.00140.00)
electromagnet Volt: 24	+
-	•
K15	

Shutoff electromagnet:

Cut-in min voltage Rated voltage : 20.0 : 24.0

Mounting and assembly dimensions:

Designation K KF MS SVS max.

mm: -mm: 5.2...5.6 mm: 1.5...1.9 mm: 1.5

Pemanks:

BOSCH-INJ, -PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet Edition : 04.06.93 replaces

Calibrating oil : ISO-4113

Injection pump : VE6/12F1050R173-6A

Type number : 0 460 426 087 Customer Part-No. : 3910792

Customer-specific information Customer : CUMMINS

Engine : 6 BTA-590

TEST BENCH REQUIREMENTS

Calibrating-oil return temp.

with thermometer : 40.00...48.00 Electronically : 42.00...50.00

Inlet press., bar: 0.30...0.40

Calibrating nozzle-holder

: 1 688 901 027 assembly

Opening |

Pressure bar: 250.00...253.00

Perforated-plate

diameter mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00 x Wall thickness : 2.00 x Length

Start of delivery

Prestroke mm: 0.3

(from BDC): +0.02(0.04)

Start of delivery block Piston stroke mm: 1.85 mm: +0.02(0.06)

Outlet

Injection pump setting values Test specifications in parentheses

Timing-device travel

1/min: 750 Speed

K17

Charge press. hPa: 1000

Setting value mm: 1.40...1.80

Shutoff

electromagnet Volt: 24

Supply-pump pressure

1/min: 750 Speed

Charge press hPa: 1000 Setting value bar: 3.30...3.90

Shutoff

electromagnet Volt: 24

Full-load del. with charge press.:

Speed 1/min: 750 Charge press. hPa: 1000

Del. quantity cm3/ 1000s.: 82.50...83.50

Shutoff

electromagnet Volt: 24 Dispersion cm3/: 4.0

1000s.: (4.5)

Full-load del. w/out charge press.:

1/min: 500

Del. quantity cm3/ 1000S.: 68.50...69.50

Shutoff

electromagnet Volt: 24

Low-idle speed regulation

Speed 1/min: 375

Del. quantity cm3/ 1000S.: 8.00...14.00

Shutoff

electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000s.: (7.0)

Full-load speed regulation

Speed 1/min: 1100 Charge press hPa: 1000 Del. quantity cm3/ 1000s.: 59.00...65.00

Shutoff

electromagnet Volt: 24

Start:

Speed 1/min: 100 Del. quantity cm3/: 60.00...110.00 mind 1000s.: 60.00

Shutoff

electromagnet Volt: 24

Inspection-pump test specifications

Test specifications in parentheses	†
Timing-device characteristic:	1nd speed 1/min: 700
2nd speed 1/min: 1050	† Charge-air pressure-setting † point hPa: 400
Charge press hPa: 1000	LDA-stroke mm: 3.4
TD travel mm: 2.102.90	+ Shutoff
mm: (1.803.20)	+ electromagnet Volt: 24
Shutoff	+ Del. quantity cm3/: 78.5079,50
electromagnet Volt: 24	† 1000s.: (74.5083.50)
3rd speed 1/min: 750 Charge press hPa: 1000	+ 2nd speed 1/min: 1180
Charge press hPa: 1000 TD travel mm: 1.401.80	+ Charge press. hPa: 1000 + Shutoff
mm: (0.902.30)	electromagnet Volt: 24
Shutoff	Del quantity cm3/: 0.003.00
electromagnet Volt: 24	+ 1000s.: (0.003.00)
4th speed 1/min: 600	+ 4th speed 1/min: 1120
Charge press hPa: 1000	† Charge press. hPa: 1000
TD travel mm: 0.501.30	+ Shutoff
mm: (0.201.60)	+ electromagnet Volt: 24
Shutoff	† Del. quantity cm3/: 15.0055.00
electromagnet Volt: 24	1000s.: (15.0055.00) + 5th speed 1/min: 1100
Supply-pump pressure characteristic:	Charge press. hPa: 1000
couplety business to common contraction to contraction.	+ Shutoff
1st speed 1/min: 500	+ electromagnet Volt: 24
Charge press. hPa: 1000	+ Del. quantity cm3/: 59.0065.00
Supply-pump	+ 1000s.: (56.0068.00)
pressure bar: 2.302.90	+ 9th speed 1/min: 1050
Shutoff	† Charge press. hPa: 1000
electromagnet Volt: 24 2nd speed   1/min: 750	+ Shutoff
Charge press. hPa: 1000	+ electromagnet Volt: 24 + Del. quantity cm3/: 77.5080.50
Supply-pump	1000\$.: (76.0082.00)
pressure bar: 3.303.90	10th speed 1/min: 900
Shutoff	+ Charge press. hPa: 1000
electromagnet Volt: 24	+ Shutoff
3rd speed 1/min: 1050	+ electromagnet Volt: 24
Charge press. hPa: 1000	† Del. quantity cm3/: 78.0081.00
Supply-pump pressure bar: 4.505.10	† 1000s.: (76.5082.50) † 12th speed 1/min: 750
Shutoff	Charge press. hPa: 1000
electromagnet Volt: 24	+ Shutoff
The state of the s	+ electromagnet Volt: 24
Overlow quantity at overflow valve:	↓ Del. quyntity cm3/: 82.5083.50
4	+ 1000S.: (80.0086.00)
1st speed 1/min: 500	+ 18th speed 1/min: 500
Charge press. hPa: - Shutoff	+ Charge press. hPa: - + Shutoff
electromagnet Volt: 24 Overflow : 41.7083.40	t electromagnet Volt: 24
quantity cm3/10s: (26.7098.40)	+ Del. quantity cm3/: 68.5069.50 + 1000s.: (64.5073.50)
2nd speed 1/min: 1050	10000:: (04:50:::13:50)
Charge press. hPa: 1000	<pre>∔ Mech. shutoff:</pre>
Shutoff	+ Mech. Abstellung:
electromagnet Volt: 24	+
Overflow : 55.60139.00	† 1st speed 1/min: 1050
quantity cm3/10s: (40.60154.00)	Charge press. hPa: 1000
Delivery-quant. and breakaway char.:	+ Del. quantity cm3/: 0.003.00 + 1000S.: (0.003.00)
K18	

Shutoff electromagnet volt: 24 Electr. shutoff: 1st speed 1/min: 375
Del. quantity cm3/: 0.00...3.00
1000S:: (0.00...3.00) Shutoff electromagnet volt: -Idle delivery: 1/min: 375 1st speed Shutoff electromagnet Volt: 24

Del. quantity cm3/: 8.00...14.00

1000s.: (6.00...16.00)

Dispersion cm3/: 5.5

1000s.: (7.0)

2nd speed 1/min: 500 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.00...4.00 1000s.: (0.00...4.00) Automatic starting fuel delivery: 1st speed 1/min: 300 Shutoff electromagnet Volt: 24 Del. quantity cm3/: 80.00...130.00 1000S.: (80.00...130.00) 2nd speed 1/min: 440 Shutoff electromagnet Volt: 24
Del. quantity cm3/: 60.00...80.00
1000s.: (60.00...80.00) 4th speed Shutoff 1/min: 100 electromagnet Volt: 24 Del. quantity cm3/: 60.00...110.00 1000S.: (60.00...110.00) Shutoff electromagnet: Cut-in min voltage : 20.0 : 24.0 Rated voltage Mounting and assembly dimensions: Designation K mn: -KF mm: 5.2...5.6 MS mm: -SVS max. mm: 2.3 LDA stroke mm: 3.4

K19

Remarks:

Operate control lever after each manifold-pressure compensator pressure change.

\* Correction at adjusting nut

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test scheet

Edition

: 03.06.93

replaces

Calibrating oil

: ISO-4113

Injection pump : VE6/12F1100R367-2 Type number : 0 460 426 165 Customer Part-No. : 391 6939

Customer specific information

Customer

: CDC

Engine

: 6BTA5.9 IND.

Power

KW: 105

Speed

1/min: 2200

TEST BENCH REQUIREMENTS

Calibrating-oil

return temo.

with thermometer : 40.00...48.00

Electronically

: 42.00...50.00

Inlet press., bar : 0.30...0.40

Calibrating nozzle-holder

assembly

: 1 688 901 027

Openina Pressure

bar: 250.00...253.00

Perforated-plate

diameter

mm: 0.5

Test inj. tubing : 1 680 750 017

Outside diameter : 6.00

x Wall thickness : 2.00

mm: 840

x Length

Start of delivery

Prestroke

mm: 0.3

(from BDC): +-0.02(0.04)

Start of delivery block

Piston stroke mm: 1.5

Outlet

mm: +-0.02(0.06)

Injection pump setting values

Test specifications in parentheses

K20

Timing-device travel

Speed 1/min: 900 Setting value mm: 2.00...2.40

Shutoff

electromagnet Volt: 12

Supply-pump pressure

Speed 1/min: 900

Setting value bar: 4.30...4.90 Shutoff

electromagnet Volt: 12

Full-load del. w/out charge press.:

Speed 1/min: 900

Del. quantity cm3/ 1000s.: 67.00...68.00

Shutoff

electromagnet Volt: 12 cm3/: 4.0 Dispersion

1000S.: (4.5)

Low-idle speed regulation

1/min: 375

Del. quantity cm3/ 1000S:: 8.00...14.00

Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 5.5 1000S.: (7.0)

Full-load speed regulation

Speed 1/min: 1150

Del. quantity cm3/ 1000s.: 52.50...58.50

Shutoff

electromagnet Volt: 12

Start:

Speed 1/min: 100 Del. quantity cm3/: 60.00...110.00 mind 1000s.: 60.00

mind

Shutoff

electromagnet Volt: 12

Inspection-pump test specifications Test specifications in parentheses

Timing-device characteristic:

2nd speed TD travel

1/min: 1100 mm: 2.70...3.50 mm: (2.40...3.80)

Shutoff

electromagnet Volt: 12

3rd speed 1/min: TD travel mm:	900 2.002.40 (1.502.90)	‡	Del. quantity cm3/: 1000s.: 9th speed 1/min:	(49.5061.50)
Shutoff electromagnet Volt:	12	Ī	Shutoff electromagnet Volt:	12
4th speed 1/min: TD travel mm:	700 0.701.50 (0.401.80)	+	Del. quantity cm3/: 1000s.:	63.5066.50 (62.0068.00)
Shutoff electromagnet Volt:		Ī	10th speed 1/min: Shutoff electromagnet Volt:	
Supply-pump pressure		+	Del. quantity cm3/: 1000s.:	68.0071.00 (66.0073.00)
1st speed 1/min: Supply-pump	*	‡	Shutoff electromagnet Volt: 12th speed 1/min:	12 900
pressure bar: Shutoff	2.603.20	+	Shutoff electromagnet Volt:	12
electromagnet Volt: 2nd speed 1/min: Supply-pump	900	Ī	Del. quyntity cm3/: 1000s.: 20th speed 1/min:	67.0068.00 (64.5070.50) 500
pressure bar: Shutoff	4.304.90	‡	Shutoff electromagnet Volt:	12
electromagnet Volt: 3rd speed 1/min: Supply-pump	12 1100	†	Del. quantity cm3/: 1000s.:	67.5075.50 (65.5077.50)
pressure bar: Shutoff	5.105.70	Ī	Mech. shutoff: Mech. Abstellung:	
electromagnet Volt: Overlow quantity at		†	1st speed 1/min: Del. quantity cm3/:	1250
1st speed 1/min:		Ī	1000s.:	(0.003.00)
Shutoff electromagnet Volt:	12	‡	electromagnet volt:	12
Overflow : quantity cm3/10s: 2nd speed 1/min:	41.7083.40 (26.7098.40) 1100	Ī	Electr. shutoff:  1st speed 1/min:	375
Shutoff electromagnet Volt:	12	‡	Del. quantity cm3/: 1000s.:	0.003.00
Overflow : quantity cm3/10s:	55.60139.00 (40.60154.00)	‡	Shutoff electromagnet volt:	-
Delivery-quant. and	breakaway char.:	+	Idle delivery:	<b>77</b> 0
2nd speed 1/min: Shutoff	1220	Ī	1st speed 1/min: Shutoff electromagnet Volt:	
electromagnet Volt: Del. quantity cm3/:	0.003.00	‡	Del. quantity cm3/: 1000s.:	8.0014.00 (6.0016.00)
3rd speed 1/min: Shutoff	(0.003.00) 1180	Ī	Dispersion cm3/: 1000s.: 2nd speed 1/min:	(7.0)
electromagnet Volt: Del. quantity cm3/:	12 10.0050.00 (10.0050.00)	+	Shutoff electromagnet Volt:	12
Shutoff electromagnet Volt:		Ī	Del. quantity cm3/: 1000s.: Shutoff	(0.504.50)
5th speed 1/min: Shutoff	1150	+	electromagnet Volt:	
electromagnet Volt: K21	12	+	Automatic starting 1	ruel delivery:

1st speed Shutoff 1/min: 130 electromagnet Volt: 12 Del. quantity cm3/: 65.00...125.00 10008.: (65.00...125.00)

2nd speed Shutoff 1/min: 250

electromagnet Volt: 12 Del. quantity cm3/: 20.00...60.00 1000s.: (20.00...60.00)

4th speed 1/min: 100 Shutoff

electromagnet Volt: 12 Del. quantity cm3/: 60.00...110.00 1000S.: (60.00...110.00)

Shutoff electromagnet:

Cut-in

min voltage Rated voltage : 10.0 : 12.0

Mounting and assembly dimensions:

Designation

mm: -mm: 5.4...5.6 mm: 1.1...1.4 mm: 1.1 K KF MS SVS max.

Remarks:

BOSCH-INJ.-PUMP TEST SPECIFICATIONS Note inst. in remarks column Test scheet Edition : 04.06.93 replaces : ISO-4113 Calibrating oil : VE6/12F1250R320-3 : 0 460 426 232 Injection pump Type number Customer Part-No. : Customer-specific information Customer : 6 BT- 590A Engine TEST BENCH REQUIREMENTS Overflow restricti: 1 463 456 303 Calibrating-oil return temp. with thermometer : 40.00...48.00 Electronically : 42.00...50.00 Inlet press., bar : 0.30...0.40 Calibrating nozzle holder : 1 688 901 027 assembly Opening bar: 250.00...253.00 Pressure Perforated-plate diameter mm: 0.5 Test inj. tubing : 1 680 750 027 Outside diameter : 6.00 x Wall thickness : 2.00 mm: 840 x Length Start of delivery Prestroke mm: -(from BDC): -Start of delivery block Piston stroke mm: 1.4 mm: +0.02(0.06) : D Outlet Injection pump setting values Test specifications in parentheses Timing-device travel

Speed 1/min: 1100 Charge press. hPa: 1200 Setting value mm: 1.30...1.70 AFB/AFB valve Volt: 24 Shutoff electromagnet Volt: 24 Supply-pump pressure Speed 1/min: 1100 Charge press hPa: 1200 Setting value bar: 6.80...7.40 KSB/AFB Volt: 24 valve Shutoff electromagnet Volt: 24 Full-load del. with charge press.: Speed 1/min: 1100 Charge press. hPa: 1200 Del. cuantity cm3/ 1000s.: 73.00...74.00 KSB/AFB valve Volt: 24 Shutoff electromagnet Volt: 24 cm3/: 4.0 1000S.: (4.5) Dispersion Full-load del. w/out charge press.: Speed 1/min: 500 Del. quantity cm3/ 1000s.: 51.00...52.00 KSB/AFB 11 valve Volt: 24 Shutoff electromagnet Volt: 24 Dispersion cm3/: 9.0 1000S.: (9.0) Low-idle speed regulation 1/min: 350 Speed Del. quantity cm3/ 1000S.: 5.50...9.50 KSB/AFB Volt: 24 valve Shutoff electromagnet Volt: 24 Del. quantity cm3/: 5.5 1000S.: (7.0) Full-load speed regulation 1/min: 1340 Speed Charge press hPa: 1200

Del. quantity cm3/	
1000s.: 52.5058.50	+ valve Volt: 24
KSB/AFB	+ Shutoff
valve Volt: 24	+ electromagnet Volt: 24
Shutoff	+ 2nd speed 1/min: 1100
electromagnet Volt: 24	+ Charge press. hPa: 1200
otooti omagitat totot at	+ Supply-pump
Start:	pressure bar: 6.807.40
	+ KSB/AFB
Speed 1/min: 100	+ valve Volt: 24
Del. quantity cm3/: 70.00130.00	+ Shutoff
mind 1000S.: 70.00	
KSB/AFB	+ electromagnet Volt: 24 + 3rd speed 1/min: 1250
Valve Volt: 24	Change appear hose 1200
Shutoff Voce. 24	Charge press. hPa: 1200
electromagnet Volt: 24	+ Supply-pump
etectronagnet vott: 24	+ pressure bar: 7.508.10
Topogetian mum test specifications	+ KSB/AFB
Inspection-pump test specifications	+ valve Volt: 24
Test specifications in parentheses	+ Shutoff
	+ electromagnet Volt: 24
Timing-device characteristic:	+
2   4/: 4050	+ Overlow quantity at overflow valve:
2nd speed 1/min: 1250	+
Charge press hPa: 1200	+ 1st speed 1/min: 500
TD travel mm: 2.203.00	+ Charge press. hPa: -
mm: (1.903.30)	+ KSB/ĀFB
KSB/AFB	+ valve Volt: 24
valve Volt: 24	+ Shutoff
Shutoff	+ electromagnet Volt: 24
electromagnet Volt: 24	+ Overflow : 41.7083.40
3rd speed 1/min: 1100	quantity cm3/10s: (26.7098.40)
Charge press hPa: 1200	2nd speed 1/min: 1250
TD travel mm: 1.301.70	Charge press. hPa: 1200
mm: (0.802.20)	KSB/AFB
KSB/AFB	Shutoff electromagnet Volt: 24 Overflow : 41.7083.40 quantity cm3/10s: (26.7098.40) 2nd speed 1/min: 1250 Charge press. hPa: 1200 KSB/AFB valve Volt: 24 Shutoff electromagnet Volt: 24 Overflow : 55.60139.00 quantity cm3/10s: (40.60154.00)
valve Volt: 24	+ Shutoff
Shutoff	oloctromagnet Volta 3/
electromagnet Volt: 24	electromagnet Volt: 24
4th speed 1/min: 1000	- Overflow : 55.60139.00
	quantity cm3/10s: (40.60154.00)
Charge press hPa: 1200 TD travel mm: 0.501.30	T National mark and the first
	† Delivery-quant. and breakaway char.:
mm: (0.201.60)	†
KSB/AFB	† 4n l d
valve Volt: 24	+ 1nd speed 1/min: 700
Shutoff	+ Charge-air pressure-setting
electromagnet Volt: 24	+ point hPa: 700
8th speed 1/min: 450	+ LDA-stroke mm: 6.8
TD travel mm: 3.004.00 *	+ KSB/AFB
mm: -	+ valve Volt: 24
KSB/AFB	+ Shutoff
valveVolt: 24	+ electromagnet Volt: 24
Shutoff	+ Del. quantity cm3/: 68.0069.00
electromagnet Volt: 24	+ Del. quantity cm3/: 68.0069.00 + 10005:: (64.5072.50)
<del>-</del>	+ 2nd speed 1/min: 1550
Supply-pump pressure characteristic:	+ Charge press. hPa: 1200
	+ KSB/AFB
1st speed 1/min: 500	+ valve Volt: 24
Charge press. hPa: 1200	+ Shutoff
Supply-pump	+ electromagnet Volt: 24
pressure bar: 4.10 4.70	1 Cocci anagine voce. 24

Del. quantity cm3/: 1000s.:	0.003.00 (0.003.00)	- KSB/AFB - valve Volt: 24
3rd speed 1/min: Charge press. hPa: KSB/AFB	1400 1200	- Electr. shutoff:
valve Volt: Shutoff	+	1st speed 1/min: 350 Del. quantity cm3/: 0.003.00 1000s.: (0.003.00)
electromagnet Volt: Del. quantity cm3/: 1000s:	24 15.0055.00 (15.0055.00)	1000s.: (0.003.00) Shutoff electromagnet volt: -
5th speed 1/min: Charge press. hPa:	1340	Idle delivery:
KSB/ĀFB valve Volt: Shutoff	. +	- 1st speed 1/min: 350 - KSB/AFB
electromagnet Volt: Del. quantity cm3/:	24 52.5058.50 (49.5061.50)	- valve Volt: 24 - Shutoff
9th speed 1/min: Charge press. hPa:	1250 +	electromagnet Volt: 24 Del. quantity cm3/: 5.509.50 1000s.: (2.5012.50) Dispersion cm3/: 5.5
KSB/ĀFB valve Volt: Shutoff	24	Dispersion cm3/: 5.5 1000s.: (7.0) 2nd speed 1/min: 450
electromagnet Volt: Del. quantity cm3/:	24 70.50,73.50 (69.0075.00)	- KSB/AFB - valve Volt: 24
10th speed 1/min: Charge press. hPa: KSB/AFB	750	Shutoff electromagnet Volt: 24 Del. quantity cm3/: 0.004.00 1000s.: (0.004.00)
valve Volt: Shutoff	+	Automatic starting fuel delivery:
electromagnet Volt: Del. quantity cm3/:	69.0074.00 (67.0076.00)	- 1st speed 1/min: 130 - KSB/AFB
12th speed 1/min: Charge press. hPa: KSB/AFB	1100	valve Volt: 24 Shutoff
valve Volt: Shutoff	+	electromagnet Volt: 24 Del. quantity cm3/: 70.00130.00 1000s.: (70.00130.00)
electromagnet Volt: Del. quyntity cm3/: 1000s.:	73.0074.00 (70.5076.50)	· 2nd speed 1/min: 250 · KSB/AFB
18th speed 1/min: Charge press. hPa: KSB/AFB	500 +	valve Volt: 24 Shutoff
valve Volt: Shutoff	<u></u>	electromagnet Volt: 24  Del. quantity cm3/: 30.0050.00  1000s.: (30.0050.00)
electromagnet Volt: Del. quantity cm3/: 1000s.:	51.0052.00 (47.5055.50)	· 4th speed 1/min: 100 · KSB/AFB
Mech. shutoff:	‡	valve Volt: 24 Shutoff
Mech. Abstellung: 1st speed 1/min:	1250	electromagnet Volt: 24  Del. quantity cm3/: 70.00130.00  1000S.: (70.00130.00)
Del. quantity cm3/: 1000s.: Shutoff	(0.003.00)	Shutoff electromagnet:
electromagnet volt:	24	Cut-in min voltage : 20.0

Rated voltage : 24.0

Mounting and assembly dimensions:

Designation

KF mm: 3.6...3.8 mm: K-OT

MS mm: SVS max. mm: 2.3
LDA stroke mm: 6.8

### Remarks:

Operate control lever after each 97 manifold-pressure compensator pressure change.

- \* Correction at adjusting nut
- \* Unscrew KSB ball valve 2 mm

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet Edition Replaces

: MAN : 17.06.93

Test oil : ISO-4113

Combination no.

: 0 400 846 513

Injection pump

EP type number

Pump designation : PES6A95D410LS2542Z

Governor

: 0 410 895 935

Governor design. Governer no.

: RQ250/1100AB1137-5L : 0 420 200 087

Customer-spec. information Customer : MAN

Engine

: D2566MFO/MFOR

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.00

Test nozzle holder

assembly

: 0 681 343 009

ð

Openina

pressure, bar : 172...175

Test lines : 1 680 750 014

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 1.50...1.60 : (1.45...1.65) Rack travel in mm : 9.00...12.00

Firing order

Phasing : 9-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no.

BASIC SETTING

1st speed rpm: 1100

Rack travel in mm : 10.50...10.60

Del.quantity cm3/: 10.0...10.2

100 s: (9.8...10.4)

cm3 : 0.3Spread

100 s: (0.6)

2nd speed rpm : 250.0 Rack travel in mm : 5.9...6.1

Del.quantity cm3/: 0.9...1.5

100 s: (0.6...1.7) cm3 : 0.3 Spread 100 s: (0.5)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -1

rpm : 550 Speed Rack travel in mm : 15.60...16.40

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed : 1100 rpm

: 100.5...102.5 Deliquantity 1000 : (98.5...104.5)

Spread cm3 : 3.00

: (6.00) 1000

RATED SPEED

1st version

Setting point:

Speed man Rack travel in mm: 16.0

Testing:

1st rack travel in: 9.50 Speed rpm : 1145...1160

Speed rpm : 1145. 2nd rack travel in: 4.00

: 1190...1220 Speed rpm

LOW IDLE 1

Setting point w/out bumper spring

Speed rpm

Rack travel in mm: 6.0 Testing: Speed rpm : 100 Minimum rack trave: 7.50 Speed rpm: 250
Rack travel in mm: 5.90...6.10
Rack travel in mm: 2.00
Speed rpm: 360...400 TORQUE CONTROL Dimension a mm : 0.20 Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 10.50...10.60 nd speed rpm : 600 Rack travel in m: 10.90...11.00 2nd speed 3rd speed rpm : 750 Rack travel in m: 10.70...10.90 4th speed rpm : 845 Rack travel in m: 10.50...10.80 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm: 700
Del.quantity cm3/: 87.5...90.5
1000 s: (85.5...92.5)
Speed rpm: 500
Del.quantity cm3/: 0.0...93.5
1000 s: (0.0...95.5) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 9.50 speed rpm : 1145...1160 STARTING FUEL DELIVERY Remarks:

BOSCH INJ. PUMP TEST SPECIFICATIONS : 2.65...2.75 : (2.60...2.80) : 10.50 : 1- 5- 3- 6- 2- 4 Prestroke mm Note remarks Rack travel in mm : : IHC 7,7 b 1 : 15.06.93 Test sheet Firing order Edition : 01 91 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 846 590 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A95D32ORS2779 Time to cyl. no. : 1 : 0 410 896 903 EP type number Governor BASIC SETTING Governor design. : RQV350...1200AB1252 1st speed rpm: 1200 : 0 420 213 124 Governer no. Pack travel in mm : 13.00...13.10 Customer-spec. information : NAVISTAR Customer Del.quantity cm3/: 9.4...9.6 : DT 466 Engine 100 s: (9.2...9.8) 1st version kW : 138.0 Spread cm3 : 0.3: 2400 Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS rpm : 350.02nd speed Rack travel in mm : 5.9...6.1 Test oil Del.quantity cm3/: 1.7...2.1 100 s: (1.5...2.3) Spread cm3 : 0.3 inlet temp. °C : 38...42 Overflow valve : 2 417 413 038 100 s: (0.5) Inlet press., bar: 2.80 (B) Setting of injection pump with governor Test nozzle holder : 1 688 901 110 assembly GUIDE SLEEVE TRAVEL 1st speed 1400 rpm 9.30...9.70 **Opening** travel mm : 250...253 1250 pressure, bar 2nd speed travel mm 7.90...8.10 Orifice plate 3rd speed 550 rpm : 0,5 3.10...3.70 350 diameter mm travel mm 4th speed rpm 1.30...1.70 travel mm Test lines : 1 680 750 008 FULL LOAD DELIV. AT FULL LOAD STOP Outside diameter x Wall thickness 1st version x Length mm : 6.00x2.00x600 Speed rpm : 1200 Aneroid pressure h: 900 Del.quantity
1000 : 94.5...96.5 : (92.5...98.5) : 3.50 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. Spread cm3 per values 1000 : (6.00) BEGINNING OF DELIVERY RATED SPEED

Test pressure, bar: 27...29

1.01

1st version Control Lever

position degrees: 49...57

Testing:

1st rack travel in: 12.00 Speed rpm : 1285...1315

2nd rack travel in: 4.00 Speed rpm : 1425...1435 4th rack travel in: 1500

: 0.00...1.00 Speed rpm

LOW IDLE 1 Control Lever

position degrees: 13...21

Testing:

Speed rpm : 100 Minimum rack trave: 9.00

Speed rpm : 350 Rack travel in mm : 5.90...6.10

CONSTANT REGULATION

Speed rpm : 350...500

Aneroid/Altitude Compensator Test

1st version

Setting

rpm : 500 hPa : 900 Speed rpm Pressure

: 13.00...13.10 Rack travel mm

Measurement

1/min : 500Speed

1st pressure hPa : -

Rack travel in m: 8.40...8.60

2nd pressure hPa : 175
Rack travel in m: 9.60...9.70
3rd pressure hPa : 430
Rack travel in m: 11.70...12.10

START CUT-OUT

1/min: 285 (295) Speed

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: -Anerota pressure n. Speed rpm : 500
Del.quantity cm3/ : 50.0...54.0
1000 s: (48.0...56.0)

**BREAKAWAY** 

L<sub>02</sub>

1st version

1mm rack travel less than

full load rack tr: 12.00 : 1285...1315 Speed rpm

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 350
Rack travel in mm : 5.90...6.10
Del.quantity cm3/ : 17.0...21.0
1000 s: (15.0...23.0)
Spread cm3 : 3.50

1000 s: (5.50)

Remarks:

: NAVISTAR #1817004c91

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Start-of-delivery blocking at start of delivery of cylinder no. 1.

**APPLICATION** 

0mnibus

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet

KHD

Edition

26.04.91

Replaces

Test oil

: ISO-4113

Combination no.

: 0 400 864 091

Injection pump

Pump designation : PES4A85D410/3RS2799-

EP type number

: 0 410 884 942

Governo:

Governor design.

: RSV325...900A7c2239

Governer no.

: 0 420 232 564

Customer-spec. information

Customer

: KHD

Engine

: BF4L913

TEST BENCH REQUIREMENTS

Test oil

inlet temp. "C

: 38...42

Overflow valve

: 1 417 413 000

Inlet press., bar: 1.50

Test nozzle holder

: 0 681 343 009 assembly

Openina

pressure, bar

: 172...175

Test lines

: 1 680 750 014

Outside diameter

x Wall thickness

x Length mm

: 6.00X2.00X600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 2.45...2.55 : (2.40...2.50) Rack travel in mm : 9.00...12.00

Firing order

L03

Phasing

: 0-90-180-270

Tolerance + - °

: 0.50 (0.75)

BASIC SETTING

1st speed

rpm: 720

Rack travel in mm : 12.10...12.20

Del.quantity cm3/: 8.0...8.1

100 s: (7.8...8.3)

Spread

cm3 : 0.3

100 s: (0.5)

2nd speed rpm : 325.0 Rack travel in mm : 7.4...7.6 Del.quantity cm3/ : 1.0...1.6 100 s: (0.8...1.8)

Spread

cm3 : 0.2 100 s: (0.4)

GUIDE SLEEVE POSITION

Control-lever position

Degree: -3

Speed

rpm : 800

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

720

rpm Del.quantity

1000

80.5...81.5 (78.5...83.5)

cm3

1000

: (5.00)

RATED SPEED

Spread

1st version

Control lever

position degrees: 85...93

Testing:

1st rack travel in: 11.10

rpm : 750...755 Speed 2nd rack travel in: 4.00

Speed : 764...779 rpm

4th rack travel in: 920

: 0.30...1.40 Speed

rpm

LOW IDLE 1

Control lever

position degrees: 61...69

Setting point w/out bumper spring

Speed rpm : 325
Rack travel in mm : 6.0
Speed rpm : 325
Rack travel in mm : 5.90...6.10
Rack travel in mm : 2.00
Speed rpm : 310...370

SET IDLE AUXILIARY SPRING Rack travel in mm: 2.00

FUEL DELIVERY CHARACTERISTICS

1st version

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 11.10 Speed rpm : 750...755

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 120.0...130.0 1000 s: (117.0...133.0) Rack travel in mm : 17.80...18.20

Remarks:

APPLICATION

Generator set

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

: CUM 8,3 113 : 15.06.93 : 07.91 Test sheet Edition Replaces Test oil : ISO-4113

: 0 400 866 149 Combination no.

Injection pump

Pump designation : PES6A100D320/3RS2763

EP type number : 0 410 806 006

Governor

Gostomor design. : RSV375...1000ADc2190

-44R

: 0 420 233 250 Governer no.

Customer-spec. information Customer : C.D.C.

Engine : 6 CTA

1st version kW : 166.0 Rated speed : 2000

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 101 assembly

Openina

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter x Wall thickness

: 6.00X2.00X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90 : (2.75...2.95)
Rack travel in mm : 10.50

Firing order : 1-5-3-6-

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 1000

Rack travel in mm : 12.90...13.00

Del.quantity cm3/: 13.3...13.5

100 s: (13.1...13.7)

cm3 : 0.4Spread

100 s: (0.6)

2nd speed rpm : 375.0 Rack travel in mm : 5.3...5.5 Del.quantity cm3/ : 1.7...2.1 100 s: (1.4...2.3)

Spread cm3 : 0.6 100 s: (0.8)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

Speed rpm: 800 Rack travel in mm: 0.30...0.70

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

: 1000 Speed rpm

, : 133.5...135.5 1000 : (131.5...137.5) Del.quantity

: 4.00 : (6.50) Spread cm3

1000

RATED SPEED

1st version Control lever

position degrees: 37...45

Testing:

1st rack travel in: 11.90 Speed rpm : 1050...1060 2nd rack travel in: 4.00

: 1115...1145 Speed rpm 3rd rack travel in: 4.00 Speed rpm: 1120...1150 4th rack travel in: 1200 Speed rpm: 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 15...23 Setting point w/out bumper spring

Speed rpm : 375 Rack travel in mm : 4.9

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm

Rack travel in mm : 5.30...5.50

TORQUE CONTROL

Torque control curve - 1st version 1st speed rpm : 1000 Rack travel in m: 12.90...13.00 2nd speed rpm : 750 Rack travel in m: 13.60...13.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 146.0...150.0
1000 s: (144.0...152.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 11.90 rpm : 1050...1060 Speed

Speed : 100 rpm

STARTING FUEL DELIVERY

Del.quantity cm3/: 145.0...165.0

1000 s: (140.0...170.0) Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 375
Rack travel in mm : 5.30...5.50
Del.quantity cm3/ : 17.0...21.0
1000 s: (14.5...23.5)

Spread cm3 : 6.00

1000 s: (8.00)

Remarks:

: C.D.C. # 3915570

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 27...29 : 2.80...2.90 : (2.75...2.95) : 9.00...12.00 : 1- 5- 3- 6- 2- 4 Note remarks Prestroke mm Test sheet : CUM Rack travel in mm : 15.06.93 Edition Firing order Replaces Test oil : ISO-4113 Combination no. : 0 400 866 180 Phasing : 0-69-120-180-240-300 Phasing Tolerance + - ° Injection pump : 0.50 (0.75) Pump designation : PES6A100b320/3RS2691 Time to cyl. no. : 1 EP type number : 9 410 230 030 Governor BASIC SETTING : RSV450...1100A0c2190 Governor design. -58R 1st speed rpm: 1100 : 0 420 233 297 Governer no. Rack travel in mm: 10.80...10.90 Customer-spec. information Customer Del.quantity cm3/: 9.8...10.0 : C.D.C. Engine : 6CT830 100 s: (9.6...10.2) : 117.1 1st version kW Spread cm3 : 0.4Rated speed : 2200 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 450.0Rack travel in mm: 5.9...6.1 Test oil inlet temp. °C : 38...42 Del.quantity cm3/: 1.8...2.2 100 s: (1.5...2.4) cm3 : 0.6 100 s: (0.8) Overflow valve Spread : 1 417 413 047 Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 assembly : 1 688 901 101 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Openina : 207...210 pressure, bar Governor spring pre-tension Click setting x : 5.00 Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test Lines : 1 680 750 014 : 1100 Speed rpm Del.quantity : 98.0...100.0 1000 : (96.0...102.0) Outside diameter : 4.00 x Wall thickness Spread cm3 x Length mm : 6.00x2.00x600 1000 : (6.50) (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. RATED SPEED 1st version per values Control lever position degrees: 56...64 BEGINNING OF DELIVERY

Testing: 1st rack travel in: 9.80 rpm : 1165...1175 Speed 2nd rack travel in: 4.00 : 1270...1280 Speed rpm 3rd rack travel in: 4.00 : 1265...1295 Speed rpm

4th rack travel in: 1350 speed rpm : 0.30...1.40

LOW IDLE 1 Control lever position degrees: 36...44 Setting point w/out bumper spring Speed rpm : 450 Rack travel in mm : 5.5

Testing: Speed rpm : 100 Minimum rack trave: 19.00 rpm : 450 Rack travel in mm : 5.90...6.10

TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 10.80...10.90 2nd speed rpm : 750 Rack travel in m: 11.10...11.30

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 102.0...106.0 1000 s: (100.0...108.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 9.80 : 1165...1175 Speed rpm

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 450 Rack travel in mm : 5.90...6.10

Del.quantity cm3/: 18.0...22.0 1000 s: (15.5...24.5) Spread cm3 : 6.00

1000 s: (8.00)

Remarks:

: C.D.C. # 3922144 Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet CUM Edition : 15.06.93 Replaces : ISO-4113 Test oil Combination no. : 0 400 866 181 Injection pump Pump designation : PES6A1000320/3RS2691 EP type number : 9 410 230 030 Governor : RSV450...1100A0c2190 Governor design. : 0 420 233 298 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6CT830 1st version : 140.0 kW Rated speed : 2200 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Opening : 207...210 pressure, bar Orifice plate diameter mm : 0,6 Test Lines : 1 680 750 014 Outside diameter x Wall thickness : 6.00x2.00x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

Test pressure, bar: 27...29 Prestroke mm : 2.80...2.90 : (2.75...2.95)
Rack travel in mm : 9.00...12.00 Firing order Phasing : 0-60-129-189-249-300 Phasing Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1100 Rack travel in mm : 11.80...11.90 Del.quantity cm3/: 11.2...11.4 100 s: (11.0...11.6) Spread cm3 : 0.4100 s: (0.6) 2nd speed rpm : 450.0 Rack travel in mm : 5.7...5.9 Del.quantity cm3/ : 1.6...2.0 100 s: (1.4...2.3) cm3 : 0.6Spread 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : 4.00 FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1100 Speed Del.quantity : 112.0...114.0 1000 : (110.0...116.0) Spread cm3: 4.00 1000 : (6.50) RATED SPEED 1st version

Control lever

position degrees: 49...57

BEGINNING OF DELIVERY

per values

Testing: 1st rack travel in: 10.80 Speed : 1140...1150 rpm 2nd rack travel in: 4.00 Speed rpm : 1235...1245
3rd rack travel in: 4.00
Speed rpm : 1235...1265 4th rack travel in: 1300 Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 31...39 Setting point w/out bumper spring

Speed rpm : 450 Rack travel in mm : 5.3

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 : 450 Speed rpm

Rack travel in mm : 5.70...5.90

TORQUE CONTROL

Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 11.80...11.90 2nd speed rpm : 750 Rack travel in m: 12.60...12.80

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750
Del.quantity cm3/ : 123.5...127.5
1000 s: (121.5...129.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.80 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 450 Rack travel in mm : 5.70...5.90

Del.quantity cm3/: 16.5...20.5 1000 s: (14.0...23.0)

Spread cm3 : 6.001000 s: (8.00)

Remarks:

: C.D.C. # 3922145
Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

APPLICATION

Tractor (tractor engines)

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet Edition

15.06.93 Replaces Test oil : ISO-4113

: 0 400 866 182 Combination no.

Injection pump

Pump designation : PES6A100D320/3RS2691

: 9 410 230 030 EP type number

Governor

Governor design. : RSV450...1100A0C2190

-60r

: 0 420 233 299 Governer no.

Customer-spec. information Customer : C.D.C.

Engine : 6CT830

1st version kW : 157.0 : 2200 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

assembly : 1 688 901 101

**Opening** 

pressure, bar : 207...210

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter x Wall thickness

x Length mm : 6.00X2.00X600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90 : (2.75...2.95)
Rack travel in mm : 9.00...12.00

: 1-5- 3- 6- 2- 4 Firing order

Phasing : 0-60-120-180-240-300

Phasing

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no.

BASIC SETTING

1st speed rpm: 1100

Rack travel in mm : 12.90...13.00

Del.quaritity cm3/: 12.6...12.8

100 s: (12.4...13.0)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 450.0 Rack travel in mm : 5.7...5.9 Del.quantity cm3/ : 1.6...2.0

100 s: (1.4...2.3) cm3 : 0.6 Spread

100 s: (0.8)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

rpm : 800 Speed Rack travel in mm : 0.30...0.70

Governor spring pre-tension Click setting x : 5.00

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

: 1100 Speed rpm

: 126.5...128.5 : (124.5...130.5) Del.quantity 1000

: 4.00 Spread cm3 1000

: (6.50)

RATED SPEED

1st version Control lever

position degrees: 46...54

Testing:
1st rack travel in: 11.90
Speed rpm: 1150...1160
2nd rack travel in: 4.00
Speed rpm: 1250...1260
3rd rack travel in: 4.00
Speed rpm: 1250...1280
4th rack travel in: 1300

rpm

LOW IDLE 1
Control lever
position degrees: 22...30
Setting point w/out bumper spring
Speed rom : 450

: 0.30...1.40

Speed rpm : 450 Rack travel in mm : 5.3

Speed

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 450
Rack travel in mm : 5.70...5.90

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.90...13.00
2nd speed rpm : 750
Rack travel in m: 13.70...13.90

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 142.5...146.5 1000 s: (140.5...148.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 11.90 Speed rpm : 1150...1160

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 450 Rack travel in mm : 5.70...5.90 Del.quantity cm3/: 16.5...20.5 1000 s: (14.0...23.0)

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3922146 Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

**APPLICATION** 

Generator

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition : CUM : 15.06.93 Replaces Test oil : ISO-4113 Phasing Combination no. : 0 400 866 183 Injection pump Pump designation : PES6A100D320/3RS2763 EP type number : 0 410 806 006 Governor BASIC SETTING Governor design. : RSV400...1100A0c2190 -61R 1st speed : 0 420 233 300 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6CT 8.3 : 111.0 1st version kW Spread Rated speed : 2200 TEST BENCH REQUIREMENTS 2nd speed Test oil inlet temp. °C : 38...42 Overflow valve Spread : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly **Opening** : 207...210 pressure, bar Orifice plate diameter mm : 0,6 1st version Test lines : 1 680 750 014 Speed Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever

Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 rpm: 1100 Rack travel in mm : 9.70...9.80 Del.quantity cm3/: 8.8...9.0 100 s: (8.6...9.2) cm3 : 0.4100 s: (0.6) rpm : 400.0Rack travel in mm : 4.9...5.1 Del.quantity cm3/ : 1.2...1.6 100 s: (0.9...1.8) cm3 : 0.6 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 Speed rpm: 800 Rack travel in mm: 0.30...0.70 Governor spring pre-tension Click setting  $\bar{x}$ : 4.50 FULL LOAD DELIV. AT FULL LOAD STOP rpm : 1100 Del.quantity : 88.0...92.0) 1000 : (6.50) position degrees: 56...64 Testing:

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 8.70
Speed rpm : 1145...1155
2nd rack travel in: 4.00
Speed rpm : 1230...1240
3rd rack travel in: 4.00
Speed rpm : 1225...1255
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever position degrees: 35...43 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 4.5

Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 400

Rack travel in mm : 4.90...5.10

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 9.70...9.80
2nd speed rpm : 750
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 96.5...100.5 1000 s: (94.5...102.5)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 8.70 Speed rpm : 1145...1155

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150.0...170.0
1000 s: (145.0...175.0)
Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400 Rack travel in mm : 4.90...5.10 Del.quantity cm3/ : 12.0...16.0 1000 s: (9.5...18.5) Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921100

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks : CUM Test sheet Edition : 15.06.93 Replaces Test oil : ISO-4113 Combination no. : 0 400 866 184 Injection pump Pump designation : PES6A100D320/3RS2691 EP type number : 9 410 230 025 Governor : RSV425...900A4C2213 Governor design. –4.R : 0 420 233 325 Governer no. Customer—spec. information Customer : C.D.C. Engine : 6 CT 8.3 : 154.0 1st version kW : 1800 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Opening. pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

: 2.80...2.90 : (2.75...2.95) : 9.00...12.00 : 1- 5- 3- 6- 2- 4 Prestroke mm Rack travel in mm: Firing order Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 830 Rack travel in mm : 13.40...13.50 Del.quantity cm3/: 13.8...14.0 100 s: (13.6...14.2) Spread cm3 : 0.4100 s: (0.6) 2nd speed rpm : 425.0
Rack travel in mm : 5.1...5.3
Del.quantity cm3/ : 1.5...1.9
100 s: (1.2...2.1)
Spread cm3 : 0.6 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : ? FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 830 Speed : 138.5...140.5 : (136.5...142.5) Del.quantity 1000 Spread cm3 : 4.00 1000 : (6.50) RATED SPEED 1st version Control lever position degrees: 48...56 Testing:

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 12.40 Speed rpm : 925...935 2nd rack travel in: 4.00 970...980 rpin Speed 3rd rack travel in: 4.00 Speed rpm : 960...990 4th rack travel in: 1030 rpm : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 22...30 Setting point w/out bumper spring Speed rpm : 425 Rack travel in mm : 4.7 Testing: Speed rpm : 100 Minimum rack trave: 19.00 : 425 rpm Rack travel in mm : 5.10...5.30 **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 12.40 rpm : 925...935 Speed STARTING FUEL DELIVERY LOW IDLE Speed rpm Rack travel in mm : 5.10...5.30 Del.quantity cm3/ : 15.0...19.0 1000 s: (12.5...21.5) Spread cm3 : 6.001000 s: (8.00) Remarks: : C.D.C. # 3921160 Limit shutoff stop screw to 1.0 mm. Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1

Generator

**APPLICATION** 

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet CUM Edition 15.06.93 Replaces Test oil : ISO-4113 Combination no. : 0 400 866 185 Injection pump Pump designation : PES6A100D320/3RS2691 : 9 410 230 025 EP type number Governor Governor design. : RSV500...1250A0c2190 62R : 0 420 233 301 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6 CTA-I 1st version kW : 164.0 Rated speed : 2500 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly **Opening** pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values

Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90 : (2.75...2.95)
Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1250 Rack travel in mm : 11.90...12.00 Del.quantity cm3/: 11.3...11.5 100 s: (11.1...11.7) Spread cm3 : 0.4100 s: (0.6) 2nd speed rpm : 500.0 Rack travel in mm : 5.6...5.8 Del.quantity cm3/ : 1.6...2.0 100 s: (1.4...2.3) Spread cm3 : 0.6 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x :? FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1250 1000 : (111.5...117.5) Del.quantity : 4.00 Spread cm3: (6.50) 1000 RATED SPEED 1st version Control Lever position degrees: 41...49 Testing:

1st rack travel in: 10.90 Speed rpm: 1305...1315 2nd rack travel in: 4.00 : 1355...1365 Speed rpm 3rd rack travel in: 4.00 Speed rpm : 1345...1375 4th rack travel in: 1450

Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 15...23
Setting point w/out bumper spring
Speed rpm : 500
Rack travel in mm : 5.2

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 500 Rack travel in mm : 5.60...5.80

#### BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.90 Speed rpm : 1305...1315 Speed

# STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 135.0...155.0 1000 s: (130.0...160.0) Rack travel in mm : 19.00...21.00

#### LOW IDLE

Speed rpm : 500 Rack travel in mm : 5.60...5.80 Del.quantity cm3/ : 16.5...20.5 1000 s: (14.0...23.0)

Spread : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921096

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery blocking 12° after start of delivery of cylinder no. 1.

BOSCH INJ. PUMP TEST SPECIFICATIONS : 2.80...2.90 : (2.75...2.95) : 9.00...12.00 : 1- 5- 3- 6- 2- 4 Prestroke mm Note remarks Rack travel in mm: Test sheet CUM Firing order : 15.06.93 Edition Replaces : ISO-4113 Test oil Phasing : 0-60-120-180-240-300 Combination no. : 0 400 866 186 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A100D320/3RS2691 Time to cyl. no. : 1 : 9 410 230 025 EP type number Governor BASIC SETTING : RSV400...1100A0C2190 Governor design. -63R 1st speed rpm: 1100 Governer no. : 0 420 233 302 Rack travel in mm : 12.30...12.40 Customer-spec. information Del.quantity cm3/: 12.2...12.4 Customer : C.D.C. Engine : 6 CT 8.3 100 s: (12.0...12.6) : 156.6 : 2200 1st version cm3 : 0.4kW Spread Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 400.0 Rack travel in mm : 5.6...5.8 Del.quantity cm3/ : 1.6...2.0 100 s: (1.3...2.2) Test oil inlet temp. °C : 38...42 Overflow valve Spread cm3 : 0.6: 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 017 npm : 800 assembly Rack travel in mm : 0.30...0.70 Opening pressure, bar : 207...210 Governor spring pre-tension Click setting x : ? Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test Lines : 1 680 750 014 Speed : 1100 rpm , i 122.5...124.5 1000 : (120.5...126.5) Del.quantity Outside diameter x Wall thickness : 4.00 : (6.50) Spread cm3 x Length mm : 5.00x2.00x600 1000 (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 50...58 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

L19

1st rack travel in: 11.30 Speed rpm : 1145...1155 2nd rack travel in: 4.00 : 1255...1265 Speed **LDW** 3rd rack travel in: 4.00 : 1245...1275 Speed rpm

4th rack travel in: 1300 : 0.30...1.40 Speed rom

LOW IDLE 1 Control lever position degrees: 28...36 Setting point w/out bumper spring Speed rpm : 400 Speed rpm : 400 Rack travel in mm : 5.2

Testing:

Speed : 100 man Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.50...5.80

## BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 11.30 Speed rpm : 1145...1155 Speed

## STARTING FUEL DELIVERY

rpm : 100 Del.quantity cm3/: 135.0...155.0 1000 s: (130.0...160.0) Rack travel in mm : 19.00...21.00

# LOW IDLE

Speed rpm : 400
Rack travel in mm : 5.60...5.80
Del.quantity cm3/: 16.0...20.0
1000 s: (13.5...22.5)

Spread cm3 : 6.00

1000 s: (8.00)

Remarks:

: C.D.C. # 3921099

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : CUM : 15.06.93 Edition Replaces : ISO-4113 Test oil Combination no. : 0 400 866 187 Injection pump Pump designation : PES6A1000320/3RS2691 EP type number : 9 410 230 025 Governor Governor design. : RSV500...1050A0c2190 : 0 420 233 303 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6-CT-I 8.3 ltr : 123.0 1st version kW : 2100 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Openina pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

Prestroke mm : 2.80...2.90 : (2.75...2.95)
Rack travel in mm : 9.00...12.00 Firing order 2- 4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. BASIC SETTING rpm : 10501st speed Rack travel in mm : 10.70...10.80 Del.quantity cm3/ : 9.9...10.1 100 s: (9.7...10.3) cm3 : 0.4Spread 100 s: (0.6) rpm : 500.02nd speed Rack travel in mm : 5.3...5.5 Del.quantity cm3/: 1.6...2.0 100 s: (1.3...2.2) cm3 : (1.6 100 s: (0.8) Spread GUIDE SLEEVE POSITION Control-lever position Degree: -3 Speed rpm: 800 Rack travel in mm: 0.30...0.70 Governor spring pre-tension Click setting x :? FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1050 . : 99.5...101.5 1000 : (97.5...103.5) Del.quantity : 4.00 Spread cm3 1000 : (6.50) RATED SPEED 1st version Control lever position degrees: 50...58

Testina:

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 9.70 Speed rpm : 1095...1105 2nd rack travel in: 4.00 : 1190...1200 Speed rpm 3rd rack travel in: 4.00 : 1180...1210 Speed rom 4th rack travel in: 1250 rpm : 0.30...1.40 Speed

LOW IDLE 1 Control lever

position degrees: 31...39 Setting point w/out bumper spring

Speed rpm : 500 Rack travel in mm : 4.9

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 500 Rack travel in mm : 5.30...5.50

TORQUE CONTROL Torque control curve – 1st version 1st speed rpm : 1050
Rack travel in m: 10.70...10.80
2nd speed rpm : 750

nd speed rpm : 750 Rack travel in m: 12.10...12.30

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 120.5...124.5 1000 s: (118.5...126.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 9.70 rpm : 1095...1105 Speed

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm Rack travel in mm : 5.30...5.50 Del.quantity cm3/ : 16.0...20.0 1000 s: (13.5...22.5)

cm3 : 6.00 1000 s: (8.00) Spread

Remarks:

: C.D.C. # 3911116

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

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BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet

: 15.06.93 Edition

Replaces

: ISO-4113 Test oil

: 0 400 866 188 Combination no.

Injection pump

Pump designation : PES6A100D320/3RS2691

: 9 410 230 025 EP type number

Governor

Governor design. : RSV425...750A4C2213

-5R

: 0 420 233 326 Governer no.

Customer-spec. information Customer : C.D.C.

Engine : 6CT- 8.3 L

1st version kW : 135.0 Rated speed : 1500

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

assembly : 1 688 901 017

Openina

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,6

Test Lines : 1 680 750 014

Outside diameter

x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values \_

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

Phasina : 0-60-120-180-240-300

Tolerance  $+ - \circ : 0.50 (0.75)$ 

Time to cyl. no. : 1

BASIC SETTING

rpm: 750 1st speed

Rack travel in mm : 14.00...14.10

Del.quantity cm3/: 14.2...14.4

100 s: (14.0...14.6)

cm3 : 0.4Spread

100 s: (0.6)

2nd speed rpm : 425.0
Rack travel in mm : 6.0..6.2
Del.quantity cm3/ : 1.8...2.2
100 s: (1.5...2.4)

cm3 : 0.6Spread 100 s: (0.8)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3 rpm : 800 Speed

Rack travel in mm : 0.30...0.70

Governor spring pre-tension Click setting x : ?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm :

Specu Del.quantity 1000 : 142.5...144.5 : (140.5...146.5)

Spread cm3 : 4.00

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 36...44

Testing:

1st rack travel in: 13.00 Speed rpm : 795...805 2nd rack travel in: 4.00 835...845 Speed rpm 3rd rack travel in: 4.00 Speed rpm: 830...860 4th rack travel in: 900 Speed rpm: 0.30...1.40 LOW IDLE 1 Control lever position degrees: 26...34 Setting point w/out bumper spring Speed rpm : 425 Rack travel in mm : 5.6 Testing: Speed rpm : 100 Minimum rack trave: 19.00 : 425 Speed rpm : 425 Rack travel in mm : 6.00...6.20 BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 13.00 rpm : 795...805 Speed STARTING FUEL DELIVERY LOW IDLE Speed rpm : 425
Rack travel in mm : 6.00...6.20
Del.quantity cm3/: 18.0...22.0
1000 s: (15.5...24.5) Spread cm3: 6.00 1000 s: (8.00) Remarks: : C.D.C. # 3921152 Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1 Limit shutoff stop screw to 1.0 mm.

Generator

APPLICATION

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet Edition

Replaces Test oil

CUM 15.06.93

: ISO-4113

Catination no.

: 0 400 866 189

Injection pump

Pump designation : PES6A100D320/3RS2691 EP type number : 9 410 230 025

Governor

Governor design.

: RSV400...1100A0C2190 -65R

Governer no.

: 0 420 233 304

Customer

Customer-spec. information : C.D.C.

Engine

: 6 CTA 8.31tr

1st version kW Rated speed

: 174.5 : 2200

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

assembly

: 1 688 901 101

**Opening** 

pressure, bar

: 207...210

Orifice plate

diameter mm

: 0,6

Test lines

: 1 680 750 014

Outside diameter

x Wall thickness

x Length mm

: 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

Phasing

: 0-60-120-180-240-300

Tolerance + - °

: 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed

rpm: 1100

Rack travel in mm : 12.70...12.80

Del.quantity cm3/: 12.8...13.0

100 s: (12.6...13.2)

Spread

Spread

cm3 : 0.4

100 s: (0.6)

rpm : 400.02nd speed

Rack travel in mm : 5.5...5.7

Del.quantity cm3/: 1.4...1.8 100 s: (1.2...2.1)

cm3 : 0.6

100 s: (0.8)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

rpm : 800

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x :?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed

rpm : 1100 Del.quantity

: 128.0...130.0

1000 : (126.0...132.0)

Spread

: 4.00 cm3

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 41...49

Testing:

L25

1st rack travel in: 11.70 rpm : 1140...1150 Speed 2nd rack travel in: 4.00 Speed rpm: 1200...1230 3rd rack travel in: 4.00 Speed rpm: 1205...1235 4th rack travel in: 1300 rpm : 0.30...,1.40 Speed LOW IDLE 1 Control lever position degrees: 20...28
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.1 Testing: Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in ---Speed rpm : 400 Rack travel in mm : 5.50...5.70 **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 11.70 Speed rpm : 1140...1150 Speed STARTING FUEL DELIVERY LOW IDLE : 400 riom Rack travel in mm : 5.50...5.70 Del.quantity cm3/ : 14.5...18.5 1000 s: (12.0...21.0) Spread cm3 : 6.00 1000 s: (8.00) Remarks: : C.D.C. # 3921145 Limit shutoff stop screw to 1.0 mm. Start-of-delivery mark 11° cam angle

after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : CUM Edition : 21.04.93 Replaces Test oil : ISO-4113 Combination no. : 0 400 866 190 Injection pump Pump designation : PES6A100D320/3RS2691 : 9 410 230 025 EP type number Governor Governor design. : RSV400...1250A0C2216 -5R : 0 420 233 327 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6 CT 8.3 ltr 1st version kW : 160.0 : 2500 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly **Opening** pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness : 6.00x2.00x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

: 2.80...2.90 : (2.75...2.95) : 9.00...12.00 : 1- 5- 3- 6- 2- 4 Prestroke mm Rack travel in mm : Firing order Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1250 Rack travel in mm : 12.00...12.10 Del.quantity cm3/: 11.8...12.0 100 s: (11.6...12.2) cm3 : 0.4Spread 100 s: (0.6) rpm : 400.02nd speed Rack travel in mm : 5.4...5.6

Del.quantity cm3/ : 1.6...2.0

100 s: (1.3...2.2)

Spread cm3 : 0.6 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : ? FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed Del.quantity 10<u>0</u>0 Speed rpm : 1250 : 118.5...120.5 : (116.5...122.5) cm3 Spread : 4.00 1000 : (6.50) RATED SPEED 1st version Control lever position degrees: 52...60 Testing:

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 11.00 Speed rpm 1290...1300
2nd rack travel in: 4.00
Speed rpm 1365...1375
3rd rack travel in: 4.00
Speed rpm 1360...1390
4th rack travel in: 1450
Speed rpm 0.20 1.70 rpm : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 26...34 Setting point w/our bumper spring Speed rpm : 400 Rack travel in mm : 5.0 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.40...5.60 TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1250 Rack travel in m: 12.00...12.10 2nd speed rpm : 750 Rack travel in m: 12.50...12.70 FUEL DELIVERY CHARACTERISTICS 1st version Speed rpm : 750 Del.quantity cm3/ : 125.0...129.0 1000 s: (123.0...131.0) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 11.00 Speed rpm : 1290...1300 Speed STARTING FUEL DELIVERY LOW IDLE Speed rpm : 400 Rack travel in mm : 5.40...5.60 Del.quantity cm3/ : 16.0...20.0 1000 s: (13.5...22.5)

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921144

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

L28

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet Edition CUM 21.04.93 Replaces : ISO-4113 Test oil

Combination no. : 0 400 866 191

Injection pump

Pump designation : PES6A1000320/3RS2691

: 9 410 230 025 EP type number

Governor

Governor design. : RSV400...1100A0C2190

-66R

: 0 420 233 305 Governer no.

Customer-spec. information Customer : C.D.C.

Engline : 6 CTA 8.3 ltr.

1st version kW : 157.0 : 2200 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 101 assembly

Opening

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter

x Wall thickness

x Length mm : 6.00x2.00x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

M01

Prestroke mm : 2.80...2.90 : (2.75...2.95)

Rack travel in mm : 9.00...12.00 Firing order : 1-5-- 3-- 6-- 2-- 4

Phasina : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no.

BASIC SETTING

1st speed rpm : 1100

Rack travel in mm : 12.00...12.10

Del.quantity cm3/: 11.2...11.4

100 s: (11.0...11.6)

Spread cm3 : 0.4

100 s: (0.6)

rpm : 400.0 2nd speed Rack travel in mm: 6.0...6.5

Del.quantity cm3/: 1.5...1.9 100 s: (1.3...2.2)

cm3: 0.6 Spread 100 s: (0.8)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3 rpm : 800 Speed

Rack travel in mm : 0.30...0.70

Governor spring pre-tension

Click setting x :?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

112.5...114.5 1000 : (110.5...116.5) Del.quantity

: 4.00 Spread cm3

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 42...50

Testing:

1st rack travel in: 11.00 Speed rpm : 1140...1150 2nd rack travel in: 4.00 Speed rpm : 1200...1210 3rd rack travel in: 4.00 Speed rpm : 1190...1220 4th rack \*\*rawel in: 1300 Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever position degrees: 21...29 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.7

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 6.00...6.50

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1180
Rack travel in m: 12.00...12.10
2nd speed rpm : 750
Rack travel in m: 13.40...13.60

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 133.5...137.5 1000 s: (131.5...139.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 11.00 Speed *rpm* : 1140...1150

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 400 Rack travel in mm : 6.00...6.50 Del.quantity cm3/ : 15.5...19.5 1000 s: (13.0...22.0)

MO2

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921159

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks CUM 21.04.93 Test sheet Edition Replaces Test oil : ISO-4113 Combination no. : 0 400 866 192 Injection pump : PES6A1000320/3RS2691 : 9 410 230 025 Pump designation EP type number Governor : RSV400...1100A0c2190 Governor design. -67R : 0 420 233 306 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6 C 8.3 ltr. : 112.0 1st version kW Rated speed : 2200 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 017 assembly Openina pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm : 1100 Rack travel in mm: 11.30...11.40 Del.quantity cm3/: 10.5...10.7 100 s: (10.3...10.9) Spread cm3 : 0.4100 s: (0.6) 2nd speed rpm : 400.0 Rack travel in mm : 5.5...5.7 Del.quantity cm3/ : 1.6...2.0 100 s: (1.3...2.2) cm3: 0.6 Spread 100 s: (0.8) GUIDE SLEEVE POSITION Control-Lever position Degree: -3 Speed rpm: 800 Rack travel in mm: 0.30...0.70 Governor spring pre-tension Click setting x :? FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1100 Del.quantity : 105.5...107.5 1000 : (103.5...109.5) cm3 : 4.00 1000 : (6.50) Spread RATED SPEED 1st version Control Lever position degrees: 42...50 Testing:

MO3

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 10.30 rpm : 1140...1150 Speed 2nd rack travel in: 4.00 : 1205...1215 Speed LOW 3rd rack travel in: 4.00 Speed rpm : 1200...1230 4th rack travel in: 1250 Speed rpm : 0.30...1.40 LOW IDLE 1 Control lever position degrees: 23...31 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.1 Testing: Speed rpm : 100 Minimum rack trave: 19.00 : 400 Speed rpm : 400 Rack travel in mm : 5.50...5.70 **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 10.30 Speed rpm : 1140...1150 STARTING FUEL DELIVERY LOW IDLE Speed rpm : 400
Rack travel in mm : 5.50...5.70
Del.quantity cm3/ : 16.0...20.0
1000 s: (13.5...22.5) : 6.00 Spread cm3 1000 s: (8.00) Remarks: : C.D.C. # 3921137 Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks CUM 21.04.93 Test sheet Edition Replaces : ISO-4113 Test oil Combination no. : 0 400 866 193 Injection pump Pump designation : PES6A100D320/3RS2691 EP type number : 9 410 230 025 Governor : RSV400...1100A0c2190 Governor design. --68R : 0 420 233 307 Governer no. Customer-spec, information Customer : C.D.C. Engine : 6 CT 8.3 : 138.0 1st version kW Rated speed : 2200 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Opening 1 and 1 pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY Test pressure, bar: 27...29

```
Prestroke mm : 2.80...2.90
: (2.75...2.95)
Rack travel in mm : 9.00...12.00
Firing order : 1-5-3-6-2-4
Phasina
                      : 0-60-120-180-240-300
Tolerance + - °
                    : 0.50 (0.75)
Time to cyl. no. : 1
BASIC SETTING
1st speed
                 rpm: 1100
Rack travel in mm : 11.40...11.50
Del.quantity cm3/: 10.7...10.9
                100 s: (10.5...11.1)
Spread
                cm3 : 0.4
                100 s: (0.6)
2nd speed rpm : 750.0
Rack travel in mm : 12.6...12.8
Del.quantity cm3/ : 12.5...12.9
100 s: (12.3...13.1)
                cm3 : 0.6
Spread
                100 s: (0.8)
GUIDE SLEEVE POSITION
Control-lever position
              Degree: -3
                rpm : 800
Rack travel in mm : 0.30...0.70
Governor spring pre-tension
Click setting x : ?
FULL LOAD DELIV. AT FULL LOAD STOP
1st version
                     : 1100
Speed
                rpm
                    : 107.5...109.5
: (105.5...111.5)
Del.quantity
               1000
Spread
               cm3
                      : 4.00
               1000
                     : (6.50)
RATED SPEED
1st version
Control lever
 position degrees: 48...56
Testing:
```

MO5

1st rack travel in: 10.40 : 1140...1150 Speed rpm 2nd rack travel in: 4.00 Speed rpm: 1225...1235
3rd rack travel in: 4.00
Speed rpm: 1215...1245
4th rack travel in: 1300
Speed rpm: 1200 rpm : 0.30...1.40 Speed

LOW IDLE 1 Control lever

position degrees: 27...35 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.3

Testing: Speed rpm : 100 Minimum rack trave: 19.00 : 400 Speed rom Rack travel in mm : 5.70...5.90

TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100

Rack travel in m: 11.40...11.50

2nd speed rpm : 750 Rack travel in m: 12.60...12.80

#### BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.40 rpm : 1140...1150

STARTING FUEL DELIVERY

LOW IDLE

Speed : 400 rpm Rack travel in mm: 5.70...5.90 Del.quantity cm3/: 14.5...18.5 1000 s: (12.0...21.0)

cm3 : 6.00 1000 s: (8.00) Spread

Remarks:

: C.D.C. # 3921094

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

M06

BOSCH INJ. PUMP TEST SPECIFICATIONS : 2.80...2.90 : (2.75...2.95) : 9.00...12.00 : 1- 5- 3- 6- 2- 4 Prestroke mm Note remarks Rack travel in mm: Test sheet : CUM Firing order Edition : 15.06.93 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 866 194 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A100b320/3RS2763 Time to cyl. no. : 1 EP type number : 0 410 806 006 Governor BASIC SETTING Governor design. : RSV415...1175A0c2190 -69R 1st speed rpm: 1175 : 0 420 233 308 Governer no. Rack travel in mm : 10.40...10.50 Customer-spec. information Customer : C.D.C Del.quantity cm3/: 9.8...10.0 Engine : 6 CT 100 s: (9.6...10.2) : 129.0 : 2350 1st version kW Spread cm3 : 0.4Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 415.0 Rack travel in mm : 5.1...5.3 Del.quantity cm3/ : 1.4...1.8 100 s: (1.2...2.1) Test oil inlet temp. °C : 38...42 Overflow valve cm3 : 0.6Spread : 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 101 Speed rpm: 800 Rack travel in mm: 0.30...0.70 assembly Openina pressure, bar : 207...210 Governor spring pre-tension Click setting x : ? Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1175 Del.quantity : 98.5...100.5 1000 : (96.5...102.5) Test lines : 1 680 750 014 Outside diameter x Wall thickness cm3 : 4.00 Spread : 6.00x2.00x600 x Length mm 1000 : (6.50) (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 56...64 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

M07

1st rack travel in: 9.40 Speed rpm : 1240...1250 2nd rack travel in: 4.00 Speed rpm : 1305...1315 3rd rack travel in: 4.00 Speed rpm : 1300...1330 4th rack travel in: 1400 Speed rpm : 0.30 1.40

Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever position degrees: 32...40 Setting point w/out bumper spring Speed rpm : 415 Rack travel in mm : 4.7

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 415
Rack travel in mm : 5.10...5.30

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1175
Rack travel in m: 10.40...10.50
2nd speed rpm : 800
Rack travel in m: 10.70...10.90

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 800 Del.quantity cm3/ : 101.0...105.0 1000 s: (99.0...107.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 9.40 Speed rpm : 1240...1250

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 150.0...170.0 1000 s: (145.0...175.0) Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 415 Rack travel in mm : 5.10...5.30 Del.quantity cm3/ : 14.5...18.5 1000 s: (12.0...21.0)

**80M** 

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921135

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 27...29 2.80...2.90 (2.75...2.95) 9.00...<u>1</u>2.00 Note remarks Prestroke mm Test sheet Edition CUM Rack travel in mm : 21.04.93 : 1-5-3-6-2-4 Firing order Replaces Test oil : ISO-4113 Combination no. : 0 400 866 197 Phasing : 0-60-120-180-240-300 Phasing Injection pump Tolerance + - ° : 0.50 (0.75) Pump designation: PES6A100D320/3RS2691 Time to cyl. no. : 1 : 9 410 230 030 EP type number Governor BASIC SETTING Governor design. RSV450...1100A0c2238 -3R 1st speed rpm: 1100 : 0 420 233 330 Governer no. Rack travel in mm : 12.10...12.20 Customer-spec, information Customer Del.quantity cm3/: 11.9...12.1 : C.b.C. Engine : 6CT830 100 s: (11.7...12.3) 1st version kW : 151.0 Spread cm3 : 0.4Rated speed : 2200 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 450.0Rack travel in mm: 5.4...5.6 Del.quantity cm3/: 1.5...1.9 100 s: (1.2...2.1) Test oil inlet temp. °C : 38...42 Overflow valve Spread cm3 : 0.6: 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 assembly : 1 688 901 101 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Opening pressure, bar : 207...210 Governor spring pre-tension Click setting x :? Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 014 Speed rpm : 1100 Aneroid pressure h: 900 Del.quantity : 117.0...123.0) Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 Spread cm3 : 4.00 1000 : (6.50) (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. RATED SPEED per values 1st version Control lever BEGINNING OF DELIVERY position degrees: 42...50 M09

Testing:
1st rack travel in: 11.10
Speed rpm : 1140...1150
2nd rack travel in: 4.00
Speed rpm : 1195...1205
3rd rack travel in: 4.00
Speed rpm : 1185...1215
4th rack travel in: 1300
Speed rpm : 0.30...1.40

LOW IDLE 1
Control Lever
position degrees: 22...30
Setting point w/out bumper spring

Testing:

Speed rpm: 100
Minimum rack trave: 19.00
Speed rpm: 450

Speed rpm : 450 Rack travel in mm : 5.0

Rack travel in mm : 5.40...5.60

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 12.10...12.20
2nd speed rpm : 750
Rack travel in m: 13.20...13.40

Aneroid/Altitude Compensator Test

1st version
Setting
Speed rpm : 500
Pressure hPa : 900
Rack travel mm : 13.20...13.40

Measurement

Speed 1/min: 500

1st pressure hPa : Rack travel in m: 10.40...10.60
2nd pressure hPa : 385
Rack travel in m: 11.40...11.50
3rd pressure hPa : 560
Rack travel in m: 12.60...13.00

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: 900
Speed rpm : 750
Del grantity cm<sup>2</sup>/: 134 5 148

Del.quantity cm3/: 136.5...140.5 1000 s: (134.5...142.5)

Aneroid pressure h: -

M10

Speed rpm : 500 Del.quantity cm3/ : 80.0...82.0 1000 s: (78.0...84.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 11.10 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 135.0...155.0 1000 s: (130.0...160.0) Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 450
Rack travel in mm : 5.40...5.60
Del.quantity cm3/: 15.0...19.0
1000 s: (12.5...21.5)
Spread cm3 : 6.00

cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921121

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5- 3- 6- 2- 4 Note remarks Test sheet : CUM 15.06.93 Edition Replaces Test oil : ISO-4113 Phasing Combination no. : 0 400 866 198 Tolerance + - ° Injection pump Pump designation : PES6A100D320/3RS2763 Time to cyl. no. EP type number : 0 410 806 006 Governor BASIC SETTING : RSV400...950A002238 Governor design. 1st speed : 0 420 233 331 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6CT830 1st version kW : 145.2 Spread Rated speed : 1900 TEST BENCH REQUIREMENTS 2nd speed Test oil inlet temp. °C : 38...42 Overflow valve Spread : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder assembly : 1 688 901 101 Speed Opening : 207...210 pressure, bar Orifice plate diameter mm : 0,6 1st version Test lines : 1 680 750 014 Speed Outside diameter x Wall thickness x Length mm : 6.00X2.00X600 Spread cm3 1000 (A) Injection pump setting values Insp. values in parentheses RATED SPEED Set equal delivery quant. per values \_ 1st version BEGINNING OF DELIVERY

: 0-60-120-180-240-300 : 0.50 (0.75) : 1 rpm: 950 Rack travel in mm : 12.10...12.20 Del.quantity cm3/ : 12.0...12.2 100 s: (11.8...12.4) cm3 : 0.4100 s: (0.6) rpm : 400.0Rack travel in mm : 5.2...5.4 Del.quantity cm3/ : 1.3...1.7 100 s: (1.0...1.9) cm3 : 0.6 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : 2.50 FULL LOAD DELIV. AT FULL LOAD STOP rpm : 950 Aneroid pressure h: 900 Del.quantity : 120.5...122.5 1000 : (118.5...124.5) : 4.00 : (6.50) Control Lever position degrees: 37...45

M11

Test pressure, bar: 27...29

Testing: 1st rack travel in: 11.10 Speed rpm : 990...1000 2nd rack travel in: 4.00 : 1065...1075 Speed rpm 3rd rack travel in: 4.00 : 1070...1100 Speed rpm 4th rack travel in: 1150 : 0.30...1.40 Speed rpm LOW IDLE 1 Control lever position degrees: 17...25 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 4.8 Testing: Speed rpm Minimum rack trave: 19.00 rpm : 400 Speed Rack travel in mm : 5.20...5.40 Aneroid/Altitude Compensator Test 1st version Settina Speed : 500 rpm hPa : 900 Pressure Rack travel mm : 12.10...12.20 Measurement 1/min: 500 Speed 1st pressure hPa : -Rack travel in m: 10.60...10.80 2nd pressure hPa : 220 Rack travel in m: 11.10...11.20 3rd pressure hPa : 305 Rack travel in m: 11.40...11.80 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: Speed rpm : 500
Del.quantity cm3/: 89.5...93.5
1000 s: (87.5...95.5) BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 11.10 rpm : 990...1000 Speed

M12

### STARTING FUEL DELIVERY

#### LOW IDLF

Speed rpm : 400
Rack travel in mm : 5.20...5.40
Del.quantity cm3/ : 13.0...17.0
1000 s: (10.5...19.5)
Spread cm3 : 6.09
1000 s: (8.00)

Remarks:

: C.D.C. # 3921127

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 27...29 : 2.80...2.90 : (2.75...2.95) : 9.00...12.00 : 1- 5- 3- 6- 2- 4 Note remarks Prestroke mm Test sheet Edition CUM Rack travel in mm: 15.06.93 Firing order Replaces Test oil : ISO-4113 Combination no. : 0 400 866 199 : 0-60-120-180-240-300 Phasing Phasing Injection pump Tolerance + - ° : 0.50 (0.75) Pump designation : PES6A100D320/3RS2691 Time to cyl. no. : 9 410 230 030 EP type number Governor BASIC SETTING Governor design. : RSV450...1100A0C2241 1st speed rpm : 1100Governer no. : 0 420 233 332 Rack travel in mm : 11.20...11.30 Customer-spec. information Del.quantity cm3/: 10.3...10.5 Customer : C.D.C. Engine : 6CT830 100 s: (10.1...10.7) : 134.2 1st version kW Spread cm3 : 0.4: 2200 Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 450.0Rack travel in mm : 5.7...5.9 Test oil Del.quantity cm3/: 1.6...2.0 100 s: (1.4...2.3) Spread cm3 : 0.6 100 s: (0.8) inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 101 rpm : 800 assembly Speed Rack travel in mm : 0.30...0.70 Opening 1 : 207...210 Governor spring pre-tension Click setting x : ? pressure, bar Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test Lines : 1 680 750 014 Speed rpm Aneroid pressure h: 900 Del.quantity 1000 : 103.5...105.5 : (101.5...107.5) Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 cm3 1000 : 4.00 Spread : (6.50) (A) Injection pump setting values Insp. values in parentheses RATED SPEED Set equal delivery quant. per values 1st version Control Lever BEGINNING OF DELIVERY position degrees: 49...57

M13

Testing: 1st rack travel in: 10.20 Speed rpm : 1140...1150 2nd rack travel in: 4.00 Speed rpm : 1220...1230 3rd rack travel in: 4.00 1215...1245 Speed Lbw 4th rack travel in: 1300 : 0.30...1.40 Speed rpm LOW IDLE 1 Control lever position degrees: 29...37 Setting point w/out bumper spring Speed rpm : 450 Rack travel in mm : 5.3 Testing: Speed rpm Minimum rack trave: 19.00 Speed : 450 rpm Rack travel in mm : 5.70...5.90 TORQUE CONTROL Torque control curve - 1st version st speed rpm : 1100

Rack travel in m: 11.20...11.30

nd speed rpm : 750 1st speed 2nd speed Rack travel in m: 12.00...12.20 Aneroid/Altitude Compensator Test 1st version Setting 500 900 Speed rpm Pressure hPa Rack travel : 12.00...12.20 mm Measurement Speed  $1/\min : 500$ 1st pressure hPa : -Rack travel in m: 10.70...10.80 2nd pressure hPa : 305 Rack travel in m: 11.10...11.20 3rd pressure hPa : 425 Rack travel in m: 11.50...11.90 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: 900 Speed rpm : 750 Speed rpm : 750 Del.quantity cm3/ : 112.5...116.5 1000 s: (110.5...118.5) Aneroid pressure h: -

M14

Speed rpm : 500 Del.quantity cm3/ : 80.0...82.0 1000 s: (78.0...84.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 10.20 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 135.0...155.0
1000 s: (130.0...160.0)
Rack travel in mm : 20.00...21.00

LOW IDLE

Speed rpm : 450
Rack travel in mm : 5.70...5.90
Del.quantity cm3/ : 16.5...20.5
1000 s: (14.0...23.0)
Spread cm3 : 6.00

pread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921120

Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet : CUM Edition : 15.06.93 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 866 200 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A100D320/3RS2691 Time to cyl. no. : 1 EP type number : 9 410 230 025 Governor BASIC SETTING : RSV400...1100A0C2190 Governor design. rpm : 11001st speed : 0 420 233 311 Governer no. Rack travel in mm : 10.70...10.80 Customer-spec. information Customer Del.quantity cm3/ : 9.6...9.8 : C.D.C. Engine : 6 C 8.3 100 s: (9.4...10.0) : 126.8 : 2200 1st version kW cm3 : 0.4Spread Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS rpm : 400.02nd speed Rack travel in mm: 5.8...6.0 Del.quantity cm3/: 1.6...2.0 100 s: (1.3...2.2) Test oil inlet temp. °C : 38...42 Overflow valve cm3 : 0.6Spread 100 s: (0.8) : 1 417 413 047 Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 017 rpm : 800 assembly Speed Rack travel in mm: 0.30...0.70 **Opening** : 207...210 Governor spring pre-tension Click setting x : ? pressure, bar Orifice plate diameter mm FULL LOAD DELIV. AT FULL LOAD STOP : 0,6 1st version Test lines : 1 680 750 014 : 1100 Speed rpm 96.5...98.5 Del.quantity Outside diameter 1000 : (94.5...100.5) x Wall thickness 4.00 Spread x Length mm : 6.00x2.00x600 1000 : (6.50) (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 48...56 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

M15

1st rack travel in: 9.70
Speed rpm: 1140...1150
2nd rack travel in: 4.00
Speed rpm: 1210...1220
3rd rack travel in: 4.00
Speed rpm: 1200...1230
4th rack travel in: 1300
Speed rpm: 0.30...1.40

LOW IDLE 1 Control lever position degrees: 27...35 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.4

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.80...6.00

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 10.70...10.80
2nd speed rpm : 750
Rack travel in m: 12.30...12.50

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 119.5...123.5 1000 s: (117.5...125.5)

**EREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 9.70 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 400 Rack travel in mm : 5.80...6.00 Del.quantity cm3/ : 16.0...20.0 1000 s: (13.5...22.5)

M16

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921133

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet CUM Edition : 15.06.93 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 866 201 Tolerance + - " : 0.50 (0.75) Injection pump : PES6A100D320/3RS2691 Pump designation Time to cyl. no. : 1 EP type number : 9 410 230 025 Governor BASIC SETTING Governor design. : RSV470...1100A0C2190 1st speed rpm: 1100 : 0 420 233 312 Governer no. Rack travel in mm : 12.10...12.20 Customer-spec. information Customer : C.D.C. Del.quantity cm3/: 11.5...11.7 Engine : 6CT830 100 s: (11.3...11.9) 1st version kW : 150.6 Spread cm3 : 0.4Raced speed : 2200 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 470.0 Rack travel in mm : 5.7...5.9 Del.quantity cm3/ : 1.6...2.0 Test oil inlet temp. °C : 38...42 100 s: (1.4...2.3) Overflow valve cm3 : 0.6 Spread : 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 Speed rpm: 800 Rack travel in mm: 0.30...0.70 : 1 688 901 101 assembly **Openina** : 207...210 pressure, bar Governor spring pre-tension Click setting  $\times$  : 4.00 Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 014 Speed 1100 rpm : 115.0...117.0 : (113.0...119.0) : 4.00 Del.quantity Outside diameter 1000 x Wall thickness Spread cm3 : 6.00x2.00x600 1000 x Length mm : (6.50) (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 48...56 BEGINNING OF DELIVERY

Testing:

M17

Test pressure, bar: 27...29

1st rack travel in: 11.10 Speed rpm: 1160...1170 2nd rack travel in: 4.00 Speed rpm: 1235...1245 3rd rack travel in: 4.00 Speed rpm: 1235...1265 4th rack travel in: 1325 Speed rpm: 0.30...1.40

LOW IDLE 1 Control lever position degrees: 26...34 Setting point w/out bumper spring Speed rpm : 470 Rack travel in mm : 5.3

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 470
Rack travel in mm : 5.70...5.90

TORQUE CONTROL

Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 12.10...12.20 2nd speed rpm : 750 Rack travel in m: 13.00...13.40

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 128.0...132.0 1000 s: (126.0...134.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 11.10 Speed rpm : 1160...1170

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 470 Rack travel in mm : 5.70...5.90 Del.quantity cm3/ : 16.5...20.5 1000 s: (14.0...23.0)

n ...

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921129

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

M18

BOSCH INJ. PUMP TEST SPECIFICATIONS 2.80...2.90 (2.75...2.95) 9.00...<u>1</u>2.00 Prestroke mm Note remarks Rack travel in mm: Test sheet : CUM Firing order : 1-5-3-6-2-4 : 21.04.93 Edition Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 866 202 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A100D320/3RS2691 Time to cyl. no. : 1 : 9 410 230 025 EP type number Governor BASIC SETTING Governor design. : RSV400...1000A0c2190 rpm: 1000 -74R 1st speed : 0 420 233 313 Governer no. Rack travel in mm : 12.10...12.20 Customer-spec. information Customer : C.D.C. Del.quantity cm3/: 12.3...12.5 Engine : 6 CT 8.3 100 s: (12.1...12.7) 1st version : 151.4 kW Spread cm3 : 0.4: 2000 Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 400.0 Rack travel in mm : 5.6...5.8 Del.quantity cm3/ : 1.4...1.8 100 s: (1.1...2.0) Test oil inlet temp. °C : 38...42 Overflow valve cm3 : 0.6Spread : 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 101 rpm : 800 assembly Speed Rack travel in mm : 0.30...0.70 Opening : 207...210 pressure, bar Governor spring pre-tension Click setting x : 4.00Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 014 Speed rpm : 1000 : 123.0...125.0 : (121.0...127.0) : 4.00 Del quantity 1000 Outside diameter x Wall thickness Spread cm31000 x Length mm : 6.00x2.00x600 : (6.50) (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 36...44 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

M19

1st rack travel in: 11.10 : 1050...1060 Speed **Lbu** 2nd rack travel in: 4.00 : 1110...1120 Speed rpm 3rd rack travel in: 4.00 Speed rpm: 1105...1135 4th rack travel in: 1175 rpm : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 21...29 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.2 Testing: : 100 Speed rpm Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.60...5.80 **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 11.10 Speed rpm : 1050...1060 Speed STARTING FUEL DELIVERY Speed : 100 rpm Del.quantity cm3/: 135.0...155.0 1000 s: (130.0...160.0) Rack travel in mm: 19.00...21.00 LOW IDLE Speed rpm : 400 Rack travel in mm : 5.60...5.80 Del.quantity cm3/: 14.0...18.0 1000 s: (11.5...20.5) Spread : 6.00 1000 s: (8.00) Remarks: : C.D.C. # 3921142 Limit shutoff stop screw to 1.0 mm. Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition 15.06.93 Replaces Test oil : ISO-4113 Combination no. : 0 400 866 203 Injection pump Pump designation : PES6A100d320/3RS2691 EP type number : 9 410 230 025 Governor Governor design. : RSV400...1100A0c2190 : 0 420 233 314 Governer no. Customer-spec. information Customer : C.D.C. : 6 CTA 8.3ltr Engine 1st version KW : 174.5 Rated speed : 2200 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Opening pressure, bar : 207...210 Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses

Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Phasing : 0-60-120-180-240-300 Tolerance + - \* : 0.50 (0.75) Time to cyl. no. BASIC SETTING 1st speed rpm: 1100Rack travel in mm : 12.70...12.80 Del.quantity cm3/: 12.7...12.9 100 s: (12.5...13.1) Spread cm3 : 0.4100 s: (0.6) 2nd speed rpm : 400.0 Rack travel in mm : 5.8...6.0 Del.quantity cm3/ : 1.7...2.1 100 s: (1.4...2.3) Spread cm3 : 0.6100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 Speed rpm: 800 Rack travel in mm: 0.30...0.70 Governor spring pre-tension Click setting x : ? FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm 1100 1000 : (125.0...129.0 cm3 : 4.00 Del.quantity Spread 1000 : (6.50) RATED SPEED 1st version Control lever position degrees: 39...47

Testing:

M21

1st rack travel in: 11.70 Speed rpm : 1140...1150 2nd rack travel in: 4.00 : 1210...1220 Speed rpm 3rd rack travel in: 4.00 Speed rpm : 1210...1240 4th rack travel in: 1300 Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever

position degrees: 17...25 Setting point w/out bumper spring

Speed rpm : 400 Rack travel in mm : 5.4

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.80...6.00

#### **BREAKAWAY**

1st version 1mm rack travel less than

full load rack tr: 11.70 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 155.0...175.0 1000 s: (150.0...180.0) Rack travel in mm : 16.20...16.40

# LOW IDLE

Speed rpm : 400 Rack travel in mm : 5.80...6.00
Del.quantity cm3/ : 17.0...21.0
1000 s: (14.5...23.5)
Spread cm3 : 6.00

1000 s: (8.00)

Remarks:

: C.D.C. # 3921126

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet : CUM : 15.06.93 Edition

Replaces Test oil

: ISO-4113

Combination no.

: 0 400 866 204

Injection pump

Pump designation : PES6A1000320/3RS2691

EP type number

: 9 410 230 025

Governor

Governor design.

: RSV400...1100A0c2190

-76R

: 0 420 233 315 Governer no.

Customer-spec. information Customer : C.D.C.

Engine

: 6 CT 8.3ltr

1st version kW

: 173.0 : 2200 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder

: 1 688 901 101 assembly

Opening

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter

x Wall thickness

: 6.00x2.00x600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

Prestroke mm : 2.80...2.90

: (2.75...2.95)

Rack travel in mm : 9.05...12.00

Firing order : 1-5-3-6-2-4

Firing order

Phasing : 0-60-120-180-240-300

Tolerance + - ° : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1100

Rack travel in mm : 10.70...10.80

Del.quantity cm3/: 9.8...10.0

100 s: (9.6...10.2)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 425.0 Rack travel in mm : 5.6...5.8 Del.quaritity cm3/ : 1.6...2.0 100 s: (1.3...2.2)

cm3 : 0.6Spread 100 s: (0.8)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

rpm : 800 Speed Rack travel in mm : 0.30...0.70

Governor spring pre-tension Click setting x : 2.50

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 1100

: 98.0...100.0 Del.quantity 1000 : (96.0...102.0)

: 4.00 Spread cm3

1000 : (6.50)

RATED SPEED

1st version Control lever

position degrees: 43...51

Testing:

M23

1st rack travel in: 9.70 Speed rpm: 1170...1180 2nd rack travel in: 4.00 Speed rpm: 1235...1245 3rd rack travel in: 4.00 Speed rpm: 1230...1260 4th rack travel in: 1300 Speed rpm: 0.30...1.40

LOW IDLE 1 Control lever position degrees: 25...33 Setting point w/out bumper spring

Speed rpm : 425 Rack travel in mm : 5.2

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 425 Rack travel in mm : 5.60...5.80 : 425

## **BREAKAWAY**

1st version 1mm rack travel less than

full load rack tr: 9.70 rpm : 1170...1180 Speed

### STARTING FUEL DELIVERY

### LOW IDLE

Rack travel in mm: 5.60...5.80
Del.quantity cm3/: 16.0...20.0
1000 s: (13.5...22.5)
Spread cm3: 6.00
1000 s: (8.00)

Remarks:

: C.D.C. # 3921163

Limit shutoff stop screw to 1.0 mm.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet CUM Edition : 15.06.93 Replaces Test oil : ISO-4113 Phasina : 0-60-120-180-240-300 Combination no. : 0 400 866 205 Tolerance + - ° : 0.50 (0.75) Injection pump : PES6A100D320/3R02691 : 9 410 230 025 Pump designation Time to cyl. no. : 1 EP type number Governor BASIC SETTING Governor design. : RSV400...1050A0c2190 1st speed rpm : 1050: 0 420 233 316 Governer no. Rack travel in mm: 12.40...12.50 Customer-spec. information Customer : C.D.C Del.quantity cm3/: 12.5...12.7 Engine : 6 CT 8.3 100 s: (12.3...12.9) : 154.4 1st version kW Spread cm3 : 0.4: 2100 Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS rpm : 400.02nd speed Rack travel in mm: 5.5...5.7
Del.quantity cm3/: 1.5...1.9
100 s: (1.3...2.2) Test oil inlet temp. °C : 38...42 Overflow valve : 0.6 Spread cm3: 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-Lever position Test nozzle holder Degree: -3 rpm : 800 assembly : 1 688 901 101 Speed Rack travel in mm : 0.30...0.70 Opening pressure, bar : 207...210 Governor spring pre-tension Click setting x : 4.00 Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines rpm : 1050 : 125,5...127.5 1000 : (123.5...129.5) cm3 : 4.00 : 1 680 750 014 Speed Del.quantity Outside diameter x Wall thickness Spread x Length mm : 6.00x2.00x600 1000 : (6.50) (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 38...46 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

M25

1st rack travel in: 11.40 rpm : 1090...1100 Speed Speed rpm: 1090...1100
2nd rack travel in: 4.00
Speed rpm: 1140...1150
3rd rack travel in: 4.00
Speed rpm: 1135...1165
4th rack travel in: 1275 rpm : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 19...27
Setting point w/out bumper spring
Speed rpm : 400
Rack travel in mm : 5.1 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.50...5.70 BREAKAWAY 1st version 1mm rack travel less than full load rack tr: 11.40 Speed rpm : 1090...1100 Speed STARTING FUEL DELIVERY LOW IDLE : 400 rpm Rack travel in mm: 5.50...5.70

Del.quantity cm3/: 15.5...19.5

1000 s: (13.0...22.0)

Spread cm3: 6.00

1000 s: (8.00) Remarks: : C.D.C. # 3921164 Limit shutoff stop screw to 1.0 mm. Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4 Note remarks Test sheet : CUM Edition : 15.06.93 Replaces : ISO-4113 Test oil Phasina : 0-60-120-180-240-300 Combination no. : 0 400 866 206 Tolerance + - " : 0.50 (0.75) Injection pump Pump designation : PES6A100D320/3RS2691 Time to cyl. no. : 1 EP type number : 9 410 230 025 Governor BASIC SETTING : RSV400...1250A0C2190 Governor design. -78R 1st speed rpm: 1250 : 0 420 233 317 Governer no. Rack travel in mn: 10.80...10.90 Customer-spec. information Customer : C.D.C. Del.quantity cm3/: 9.9...10.1 Engine : 6 CTA 8.3 100 s: (9.7...10.3) : 131.0 : 2500 1st version kW cm3 : 0.4 Spread Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 400.0Rack travel in mm: 5.2...5.4 Del.quantity cm3/: 1.2...1.6 Test oil inlet temp. °C : 38...42 100 s: (1.0...1.9) cm3 : 0.6 Overflow valve Spread : 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 rpm : 800 : 1 688 901 101 assembly Rack travel in mm : 0.30...0.70 Opening Governor spring pre-tension pressure, bar : 207...210 Click setting x : 4.25Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 014 Speed Speed Del.quantity 1000 rpm : 1250 : 99.5...101.5 : (97.5...103.5) Outside diameter x Wall thickness : 4.00 Spread cm3 x Length mm : 6.00x2.00x600 1000 : (6.50)(A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control lever position degrees: 51...59 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

M27

1st rack travel in: 9.80 speed rpm : 1325...1335 2nd rack travel in: 4.00 Speed : 1400...1410 rpm 3rd rack travel in: 4.00 Speed rpm : 1400...1430 4th rack travel in: 1500 Speed rpm : 0.30...1.40 LOW IDLE 1 Control lever position degrees: 26...34 Setting point w/cut bumper spring Speed rpm: 400 Rack travel in mm: 4.8 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.20...5.40 **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 9.80 Speed rpm : 1325...1335 Speed STARTING FUEL DELIVERY LOW IDLE Speed rom : 400 Rack travel in mm : 5.20...5.40 Del.quantity cm3/ : 12.5...16.5 1000 s: (10.0...19.0) Spread cm3 : 6.001000 s: (8.00) Remarks: : c.b.c. # 3921107 Limit shutoff stop screw to 1.0 mm. Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.80...2.90 : (2.75...2.95)
Rack travel in mm : 9.00...12.00 Note remarks Test sheet : 1-5-3-6-2-4 : CUM Firing order Edition : 15.06.93 Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 866 207 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A100D320/3RS2691 EP type number : 9 410 230 025 Time to cyl. no. : 1 Governor BASIC SETTING Governor design. : RSV400...1100A0C2190 -79R rpm: 1100 1st speed Governer no. : 0 420 233 318 Rack travel in mm : 10.60...10.70 Customer-spec. information Customer : C.D.C. Del.quantity cm3/: 9.5...9.7 Engine : 6 C 8.3 100 s: (9.3...9.9) : 129.0 : 2200 1st version kW cm3 : 0.4Spread Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS rpm : 400.02nd speed Rack travel in mm: 5.8...6.0 Del.quantity cm3/: 1.6...2.0 100 s: (1.3...2.2) Test oil inlet temp. °C : 38...42 cm3 : 0.6 Overflow valve Spread : 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 017 rpm : 800 assembly Speed Rack travel in mm : 0.30...0.70 Opening pressure, bar : 207...210 Governor spring pre-tension Click setting x :? Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 014 Speed Del.quantity 10<u>0</u>0 : 1100 Speed rpm : 95.5...97.5 : (93.5...99.5) Outside diameter x Wall thickness : 4.00 Spread cm3 : 6.00X2.00X600 x Length mm 1000 : (6.50) (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version Control lever per values position degrees: 41...49 BEGINNING OF DELIVERY Test pressure, bar: 27...29 Testing:

N<sub>0</sub>1

1st rack travel in: 9.60 Speed rpm : 1140...1150 2nd rack travel in: 4.00 Speed rpm : 1200...1210 3rd rack travel in: 4.00 rpm : 1190...1220 Speed 4th rack travel in: 1300 Speed rpm : 0.30...1.40 LOW IDLE 1 Control lever position degrees: 19...27 Setting point w/out bumper spring ÚDW. Rack travel in mm: 5.4 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.80...6.00 **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 9.60 Speed rpm : 1140...1150 Speed STARTING FUEL DELIVERY LOW IDLE Speed rpm : 400 Rack travel in mm: 5.80...6.00 Del.quantity cm3/: 16.0...20.0 1000 s: (13.5...22.5) Spread cm3 : 6.00 1000 s: (8.00) Remarks: : C.D.C. # 3921143 Limit shutoff stop screw to 1.0 mm. Start-of-delivery mark 11° cam angle

after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : CUM Edition : 15.06.93 Replaces : ISO-4113 Test oil Combination no. : 0 400 866 208 Injection pump Pump designation : PES6A100D320/3RS2691 EP type number : 9 410 230 025 Governor : RSV400...1100A0C2190 Governor design. -80R : 0 420 233 319 Governer no. Customer-spec. information Customer : C.D.C. : 6 CT 8.3 Engine : 156.6 1st version kW Rated speed : 2200 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder : 1 688 901 101 assembly Openina . : 207...210 pressure, bar Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness : 6.00x2.00x600 x Length mm (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-6- 2- 4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm: 1100 Rack travel in mm : 12.30...12.40 Del.guantity cm3/: 12.4...12.6 100 s: (12.2...12.8) cm3 : 0.4Spread 100 s: (0.6) rpm : 400.02nd speed Rack travel in mm : 5.6...5.8 Del.quantity cm3/ : 1.5...1.9 100 s: (1.2...2.1) Spread cm3 : 0.6100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : ? FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed : 1100 rpm Del.quantity : 124.5...126.5 1000 : (122.5...128.5) : 4.00 Spread cm3 : (6.50) 1000 RATED SPEED 1st version Control lever position degrees: 40...48 Testing:

**NO3** 

per values

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

1st rack travel in: 11.30 Speed rpm : 1140...1150 2nd rack travel in: 4.00 Speed rpm : 1195...1205 3rd rack travel in: 4.00 rpm : 1195...1225 Speed 4th rack travel in: 1300 rpm : 0.30...1.40 Speed LOW IDLE 1 Control lever position degrees: 21...29 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.2 Testing: Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.60...5.80 **BREAKAWAY** 1st version 1mm rack travel less than full load rack tr: 11.30 Speed rpm : 1140...1150 Speed STARTING FUEL DELIVERY LOW IDLE : 400 Speed rpm -Rack travel in mm : 5.60...5.80 Del.quantity cm3/: 15.0...19.0 1000 s: (12.5...21.5) cm3 : 6.00 1000 s: (8.00) Spread Remarks: : C.D.C. # 3921140 Limit shutoff stop screw to 1.0 mm. Start-of-delivery mark at 10° cam rotation angle after start of delivery, cylinder 1 BOSCH INJ. PUMP TEST SPECIFICATIONS Prestroke mm : 2.80...2.90 : (2.75...2.95)
Rack travel in mm : 9.00...12.00 Note remarks Test sheet Firing order : 1-5-3-6-2-4 : CUM : 15.06.93 Edition Replaces Test oil : ISO-4113 Phasing : 0-60-120-180-240-300 Combination no. : 0 400 866 209 Tolerance + - ° : 0.50 (0.75) Injection pump Pump designation : PES6A1000320/3RS2691 Time to cyl. no. : 1 EP type number : 9 410 230 025 Governor BASIC SETTING : RSV400...1050A0C2190 Governor design. -81R rpm: 1050 1st speed Governer no. : 0 420 233 320 Rack travel in mm : 9.60...9.70 Customer-spec. information Customer Del.guantity cm3/: 7.9...8.1 : C.D.C. : 6 C 8.3 Engine 100 s: (7.7...8.3) : 89.0 : 2100 1st version kW Spread cm3 : 0.4Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS rpm : 400.8 2nd speed Rack travel in mm: 5.6...5.8

Del.quantity cm3/: 1.4...1.8

100 s: (1.2...2.1)

Spread cm3: 0.6

100 s: (0.8) Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-Lever position Test nozzle holder Degree: -3 assembly : 1 688 901 101 rpm : 800 Speed Rack travel in mm : 0.30...0.70 **Openina** : 207...210 pressure, bar Governor spring pre-tension Click setting x : ? Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 014 rpm : 1050 Speed 79.5...81.5 10<u>0</u>0 : (77.5...83.5) Del.quantity Outside diameter x Wall thickness cm3 : 4.00 1000 : (6.50) Spread cm3 x Length mm : 6.00x2.00x600 (A) Injection pump setting values RATED SPEED Insp. values in parentheses Set equal delivery quant. 1st version per values Control Lever position degrees: 41...49 BEGINNING OF DELIVERY

Testing:

NO5

Test pressure, bar: 27...29

1st rack travel in: 8.60 Speed rpm : 1095...1105 2nd rack travel in: 4.00 Speed rpm : 1135...1145 3rd rack travel in: 4.00 Speed rpm : 1125...1155 4th rack travel in: 1200 Speed rpm : 0.30 1.40

Speed rpm : 0.30...1.40

LOW IDLE 1 Control lever position degrees: 23...31 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.2

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.60...5.80

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 9.60...9.70
2nd speed rpm : 750
Rack travel in m: 10.40...10.60

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/: 86.5...90.5 1000 s: (84.5...92.5)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 8.60 Speed rpm : 1095...1105

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 145.0...165.0 1000 s: (140.0...170.0) Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400 Rack travel in mm : 5.60...5.80 Del.quantity cm3/ : 14.5...18.5 1000 s: (12.0...21.0) Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921089

Limit shutoff stop screw to 1.0 mm.

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

BOSCH INJ. PUMP TEST SPECIFICATIONS

Note remarks

Test sheet

Edition

Replaces

: ISO-4113 Test oil

Combination no.

: 0 400 866 210

Injection pump

Pump designation : PES6A1D0D320/3RS2691

EP type number Governor

Governor design.

Governer no.

-6R : 0 420 233 328

: 9 410 230 025

: RSV400...1050A0C2216

15.06.93

Customer-spec, information Customer

: C.D.C.

Engine

: 6 CTA 8.3

1st version kW Rated speed

: 141.7 : 2100

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C

: 38...42

Overflow valve

: 1 417 413 047

Inlet press., bar: 1.50

Test nozzle holder : 1 688 901 017

Opening

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,6

Test lines : 1 680 750 014

Outside diameter

x Wall thickness

: 6.00X2.00X600 x Length mm

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values \_\_\_\_\_

BEGINNING OF DELIVERY

Test pressure, bar: 27...29

NO7

Prestroke mm : 2.80...2.90 : (2.75...2.95) Rack travel in mm : 9.00...12.00 Firing order : 1-5-3-6-2-4

: 0-60-120-180-240-300 Phasing

Tolerance + - \* : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm: 1050

Rack travel in mm : 11.10...11.20

Del.quantity cm3/: 10.0...10.2

100 s: (9.8...10.4)

Spread cm3 : 0.4

100 s: (0.6)

2nd speed rpm : 400.0 Rack travel in mm : 5.9...6.1 Del.quantity cm3/ : 1.8...2.2 100 s: (1.5...2.4)

cm3 : 0.6

Spread 100 s: (0.8)

GUIDE SLEEVE POSITION Control-lever position

Degree: -3

Speed rpm: 800 Rack travel in mm: 0.30...0.70

Governor spring pre-tension

Click setting x :?

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

: 1050 Speed rpm

: 100.5...102.5 : (98.5...104.5) Del.quantity 1000

cm3 : 4.00

Spread

1000 : (6.50)

RATED SPEED

1st version

Control lever

position degrees: 43...51

Testing:

1st rack travel in: 10.10 Speed rpm: 1090...1100 2nd rack travel in: 4.00 Speed rpm: 1170...1180 3rd rack travel in: 4.00 Speed rpm: 1160...1190 4th rack travel in: 1250 Speed rpm: 0.30...1.40

LOW IDLE 1 Control lever position degrees: 25...34 Setting point w/out bumper spring Speed rpm : 400 Rack travel in mm : 5.5

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 400
Rack travel in mm : 5.90...6.10

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1050
Rack travel in m: 11.10...11.20
2nd speed rpm : 750
Rack travel in m: 12.60...12.80

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 126.0...130.0 1000 s: (124.0...132.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.10 Speed rpm : 1090...1100

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 135.0...155.0 1000 s: (130.0...160.0) Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400 Rack travel in mm : 5.90...6.10 Del.quantity cm3/ : 18.0...22.0 1000 s: (15.5...24.5)

NO8

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3924685

Limit shutoff stop screw to 1.0 mm.

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition : CUM : 15.06.93 Replaces Test oil : ISO-4113 Combination no. : 0 400 866 211 Injection pump Pump designation: PES6A100D320/3RS2691 EP type number : 9 410 230 025 Governor : RSV400...1050A0C2216 Governor design. -7R Governer no. : 0 420 233 329 Customer-spec. information : C.D.C. Customer Engine : 6 CT 8.3 1st version kW : 141.7 Rated speed : 2100 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder assembly : 1 688 901 017 Openina pressure, bar : 207...210 Orifice plate : 0,6 diameter mm Test lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 J (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY

Prestroke mm : 2.80...2.90 : (2.75...2.95)

Rack travel in mm : 9.00...12.00 Firing order : 1-5- 3- 6- 2- 4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING rpm : 10501st speed Rack travel in mm : 11.90...12.00 Del.quantity cm3/: 11.5...11.7 100 s: (11.3...11.9) Spread cm3 : 0.4100 s: (0.6) rpm : 400.0 2nd speed Rack travel in mm: 5.8...6.0

Del.quantity cm3/: 1.6...2.0

100 s: (1.3...2.2)

Spread cm3: 0.6

100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degrea: -3 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x :? FULL LOAD DELIV. AT FULL LOAD STOP 1st version rpm : 1050 Speed Specu Del.quantity 1000 : 115.0...117.0 : (113.0...119.0) cm3 : 4.00 Spread 1000 : (6.50) RATED SPEED 1st version Control lever position degrees: 42...50 Testing:

N09

Test pressure, bar: 27...29

1st rack travel in: 10.90 Speed rpm : 1090...1100 2nd rack travel in: 4.00 1155...1165 Speed rpm 3rd rack travel in: 4.00 : 1145...1175 Speed rpm 4th rack travel in: 1200 rpm : 0.30...1.40 Speed

LOW IDLE 1 Control lever

position degrees: 23...31 Setting point w/out bumper spring

Speed rpm : 400 Rack travel in mm : 5.4

Testina:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 400 Rack travel in mm : 5.80...6.00

TORQUE CONTROL

Torque control curve - 1st version

1st speed rpm : 1050 Rack travel in m: 11.90...12.00

nd speed rpm : 750 Rack travel in m: 13.20...13.40 : 750 2nd speed

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750 Del.quantity cm3/ : 134.0...138.0 1000 s: (132.0...140.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.90 Speed rpm : 1090...1100 Speed

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/ : 135.0...155.0 1000 s: (132.0...158.0) Rack travel in mm : 19.00...21.00

LOW IDLE

Speed rpm : 400 Rack travel in mm : 5.80...6.00 Del.quantity cm3/ : 16.0...20.0 1000 s: (13.5...22.5)

N10

Spread cm3 : 6.001000 s: (8.00)

Remarks:

: C.D.C. # 3921104

Limit shutoff stop screw to 1.0 mm.

Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 27...29 : 2.80...2.90 : (2.75...2.95) : 9.00...12.00 : 1- 5- 3- 6- 2- 4 Note remarks Prestroke mm Test sheet CUM Rack travel in mm : Edition : 15.06.93 Firing order Replaces : ISO-4113 Test oil Combination no. : 0 400 866 212 Phasing : 0-60-120-180-240-300 Phasing Injection pump Tolerance + - ° : 0.50 (0.75) Pump designation : PES6A100b320/3RS2691 Time to cyl. no. : 9 410 230 030 EP type number Governor BASIC SETTING Governor design. : RSV450...1100A0c2190 -82R 1st speed rpm: 1100 : 0 420 233 321 Governer no. Rack travel in mm: 10.20...10.30 Customer-spec. information Customer : C.D.C. Del.quantity cm3/: 8.9...9.1 : 6CT830 Engine 100 s: (8.7...9.3) 1st version kW : 117.1 Spread cm3 : 0.4Rated speed : 2200 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 450.0Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 101 assembly rpm : 800 Speed Rack travel in mm : 0.30...0.70 **Opening** : 207...210 Governor spring pre-tension Click setting x : ? pressure, bar Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 014 Speed rpm : 1100 : 89.5...91.5 : (87.5...93.5) : 4.00 Del.quantity Outside diameter 1000 x Wall thickness Spread cm3 x Length mm : 6.00x2.00x600 1000 : (6.50) (A) Injection pump setting values Insp. values in parentheses RATED SPEED Set equal delivery quant. 1st version per values Control lever position degrees: 47...55 BEGINNING OF DELIVERY

Testing: 1st rack travel in: 9.20 Speed rpm : 1140...1150 2nd rack travel in: 4.00 : 1200...1210 Speed rpm 3rd rack travel in: 4.00 Speed rpm : 1195...1225 4th rack travel in: 1300 : 0.30...1.40 Speed rpm LOW IDLE 1 Control lever position degrees: 29...37 Setting point w/out bumper spring Speed rpm : 450 Rack travel in mm : 5.3 Testing: speed rpm : 100 Minimum rack trave: 19.00 Speed Speed rpm : 450 Rack travel in mm : 5.70...5.90 TORQUE CONTROL Torque control curve - 1st version ist speed rpm : 1:00
Rack travel in m: 10.20...10.30
2nd speed rpm : 750
Rack travel in m: 10.80...11.00 FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 88.5...92.5 1000 s: (86.5...94.5)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 9.20 rpm : 1140...1150 Speed

STARTING FUEL DELIVERY

Speed : 100 rpm Del.quantity cm3/: 145.0...165.0 1000 s: (140.0...170.0) Rack travel in mm: 19.00...21.00

LOW IDLE

Speed rpm : 450 Rack travel in mm : 5.70...5.90

Spread cm3 : 6.00 1000 s: (8.00) Remarks:

Del.quantity cm3/: 14.5...18.5 1000 s: (12.0...21.0)

: C.D.C. # 3921092 Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 27...29 Prestroke mm : 2.80...2.90 : (2.75...2.95)

Rack travel in mm : 9.00...12.00

Firing order : 1-5-3-6-2-4 Note remarks : CUM Test sheet Edition : 15.06.93 Replaces : ISO-4113 Test oil Combination no. : 0 400 866 213 : 0-60-120-180-240-300 Phasing Phasing Injection pump Tolerance + - ° : 0.50 (0.75) Pump designation : PES6A100D320/3RS2691 Time to cyl. no. : 1 : 9 410 230 030 EP type number Governor BASIC SETTING : RSV450...1100A0c2190 Governor design. 1st speed rpm: 1100 : 0 420 233 322 Governer no. Rack travel in mm : 12.10...12.20 Customer-spec. information Customer : C.D.C. Del.quantity cm3/: 12.0...12.2 Engine : 6CT830 100 s: (11.8...12.4) 1st version kW : 150.6 cm3 : 0.4Spread : 2200 Rated speed 100 s: (0.6) TEST BENCH REQUIREMENTS 2nd speed rpm : 450.0 Rack travel in mm : 5.7...5.9 Del.quantity cm3/ : 1.4...1.8 100 s: (1,2...2.1) Test oil inlet temp. °C : 38...42 Overflow valve Spread cm3 : 0.6: 1 417 413 047 100 s: (0.8) Inlet press., bar: 1.50 GUIDE SLEEVE POSITION Control-lever position Test nozzle holder Degree: -3 : 1 688 901 101 assembly : 800 rpm Rack travel in mm : 0.30...0.70 Opening pressure, bar : 207...210 Governor spring pre-tension Click setting x : 4.50Orifice plate diameter mm : 0,6 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Test lines : 1 680 750 014 : 1100 Speed rpm Del.quantity : 120.0...122.0 1000 : (118.0...124.0) Outside diameter x Wall thickness Spread cm3 : 4.00 : 6.00x2.00x600 : (6.50) x Length mm 1000 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. RATED SPEED 1st version per values Control lever position degrees: 46...54 BEGINNING OF DELIVERY

Testing: 1st rack travel in: 11.10 : 1155...1165 Speed rpm 2nd rack travel in: 4.00 Speed : 1245...1255 rpm 3rd rack travel in: 4.00 Speed rpm: 1240...1270 4th rack travel in: 1300 Speed : 0.30...1.40 rpm

LOW IDLE 1 Control lever

position degrees: 22...30 Setting point w/out bumper spring

Speed rpm : 450 Rack travel in mm : 5.3

Testing:

Speed rpm : 100 Minimum rack trave: 19.00 Speed rpm : 450 Rack travel in mm : 5.70...5.90

TORQUE CONTROL Torque control curve - 1st version 1st speed rpm : 1100 Rack travel in m: 12.10...12.20 2nd speed rpm : 750 Rack travel in m: 13.20...13.40

FUEL DELIVERY CHARACTERISTICS

1st version

Speed rpm : 750 Del.quantity cm3/ : 134.0...138.0 1000 s: (132.0...140.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 11.10 rpm : 1155...1165 Speed

STARTING FUEL DELIVERY

: 100 Speed rpm

Del.quantity cm3/: 145.0...165.0 1000 s: (140.0...170.0) Rack travel in mm: 20.00...21.00

LOW IDLE

Speed rpm : 450 Rack travel in mm : 5.70...5.90

N14

Del.quantity cm3/: 14.5...18.5 1000 s: (12.0...21.0)

Spread cm3 : 6.001000 s: (8.00)

Remarks:

: C.D.C. # 3921093 Adjustment without torque-control spring retainer with 1 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Test pressure, bar: 27...29 Note remarks Test sheet : CUM Edition : 15.06.93 Replaces : ISO-4113 Test oil : 0 400 866 214 Combination no. Injection pump Pump designation : PES6A100D320/3RS2691 EP type number : 9 410 230 030 Governor Governor design. : RSV450...1100A0c2190 : 0 420 233 323 Governer no. Customer-spec. information Customer : C.D.C. Engine : 6CT830 : 134.2 1st version kW : 2200 Rated speed TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 047 Inlet press., bar: 1.50 Test nozzle holder assembly : 1 688 901 101 Opening : 207...210 pressure, bar Orifice plate diameter mm : 0,6 Test lines : 1 680 750 014 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values

: 2.80...2.90 : (2.75...2.95) : 9.00...12.00 : 1-5-3-6-2-4 Prestroke mm Rack travel in mm : Firing order : 0-60-120-180-240-300 Phasing Phasing Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING 1st speed rpm : 1100Rack travel in mm : 11.20...11.30 Del.guantity cm3/: 10.3...10.5 100 s: (10.1...10.7) cm3 : 0.4Spread 100 s: (0.6) 2nd speed rpm : 450.0 Rack travel in mm : 5.7...5.9 Del.quantity cm3/: 1.6..2.0 100 s: (1.4..2.3) cm3 : 0.6 Spread 100 s: (0.8) GUIDE SLEEVE POSITION Control-lever position Degree: -3 rpm : 800 Speed Rack travel in mm : 0.30...0.70 Governor spring pre-tension Click setting x : ?FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed 1100 rpm 103.5...105.5 (101.5...107.5) Del.quantity 1000 : 4.00 cm3 Spread 1000 : (6.50) RATED SPEED 1st version Control lever position degrees: 49...57

N15

BEGINNING OF DELIVERY

Testing:
1st rack travel in: 10.20
Speed rpm: 1140...1150
2nd rack travel in: 4.00
Speed rpm: 1220...1230
3rd rack travel in: 4.00
Speed rpm: 1215...1245
4th rack travel in: 1300

rpm

LOW IDLE 1
Control lever
position degrees: 31...39
Setting point w/out bumper spring
Speed rpm : 450
Rack travel in mm : 5.3

: 0.30...1.40

Testing:
Speed rpm : 100
Minimum rack trave: 19.00
Speed rpm : 450
Rack travel in mm : 5.70...5.90

TORQUE CONTROL
Torque control curve - 1st version
1st speed rpm : 1100
Rack travel in m: 11.20...11.30
2nd speed rpm : 750
Rack travel in m: 12.00...12.20

FUEL DELIVERY CHARACTERISTICS

1st version Speed rpm : 750 Del.quantity cm3/ : 111.5...115.5 1000 s: (109.5...117.5)

BREAKAWAY

Speed

1st version 1mm rack travel less than

full load rack tr: 10.20 Speed rpm : 1140...1150

STARTING FUEL DELIVERY

LOW IDLE

Speed rpm : 450 Rack travel in mm : 5.70...5.90 Del.quantity cm3/: 16.5...20.5 1000 s: (14.0...23.0)

Spread cm3 : 6.00 1000 s: (8.00)

Remarks:

: C.D.C. # 3921095 Adjustment without torque-control spring retainer with 0,5 mm less control-rod travel. Increase in full-load delivery with torque-control spring retainer.

Start-of-delivery mark 11° cam angle after start of delivery cyl. 1

Limit shutoff stop screw to 1.0 mm.

BOSCH INJ. PUMP TEST SPECIFICATIONS Firing order : 1-5-3-6-2-4 Note remarks Test sheet : DAF Phasing : 0-60-120-180-240-300 Edition 18.06.93 Replaces Tolerance + - ° : 0.50 (0.75) Test oil : ISO-4113 BASIC SETTING Combination no. : 0 401 846 498 rpm : 10001st speed Injection pump Pump designation : PE6P110A720RS441 Rack travel in mm : 12,20...12.30 : 0 411 816 148 EP type number Governor Del.quantity cm3/: 13.7...13.9 : RQ225/1200PA617-1 : 0 421 801 254 Governor design. Governer no. 100 s: (13.4...14.1) Customer-spec. information Spread cm3 : 0.4Customer : DAF 100 s: (0.7) : DHS825 Engine 2nd speed rpm : 225.0
Rack travel in mm : 5.5...5.7
Del.quartity cm3/ : 1.0...1.5
100 s: (0.7...1.7) 1st version kW : 184.0 Rated speed : 2400 TEST BENCH REQUIREMENTS cm3 : 0.4 100 s: (0.7) Spread Test oil inlet temp. °C : 38...42 GUIDE SLEEVE POSITION Control-lever position Overflow valve Degree: -1 : 1 417 413 025 rpm : 650 Rack travel in mm : 15.20...16.40 Inlet press., bar: 1.50 FULL LOAD DELIV. AT FULL LOAD STOP Test nozzle holder assembly : 0 681 343 009 1st version rpm : 1000Speed Opening Aneroid pressure h: 700 : 137.0...139.0 pressure, bar : 172...175 Del.quantity 1000 : (134.5...141.5) : 4.00 Spread cm3 1000 : (7.50) Test lines : 1 680 750 089 Outside diameter RATED SPEED x Wall thickness x Length mm : 6.00x1.50x600 1st version (A) Injection pump setting values Setting point: Insp. values in parentheses Speed rpm : 600 Rack travel in mm : 15.8 Set equal delivery quant. per values Testing: BEGINNING OF DELIVERY 1st rack travel in: 11.20 Speed rpm : 1235...1251 2nd rack travel in: 4.00 Test pressure, bar: 25...27 Speed rpm: 1310...1340 4th rack travel in: 1450 : 2.80...2.90 : (2.75...2.95) Prestroke mm

Speed

rpm : 0.00...1.00

Rack travel in mm : 9.00...12.00

LOW IDLE ! Setting point w/out bumper spring rpm Rack travel in mm: 5.6 Testing: Speed rpm: 100
Minimum rack trave: 6.70
Speed rpm: 225
Rack travel in mm: 5.50...5.70
Rack travel in mm: 2.00
Speed rpm: 370...410 TORQUE CONTROL Dimension a mm Torque control curve - 1st version 1st speed rpm : 1000 Rack travel in m: 12.20...12.30 2nd speed rpm : 1190 Rack travel in m: 12.10...12.30 Aneroid/Altitude Compensator Test 1st version Setting Speed rpm : 600 Pressure hPa : 700 Rack travel mm : 12.20...12.30 Measurement 1/min : 600 Speed 1st pressure hPa : -Rack travel in m: 10.10...10.20 2nd pressure hPa : 360 Rack travel in m: 11.70...11.80 3rd pressure hPa : 290 Rack travel in m: 10.60...11.00 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: -Speed rpm : 600 Del.quantity cm3/: 92.0...94.0 1000 s: (89.5...96.5) **BREAKAWAY** 1st version

STARTING FUEL DELIVERY

Speed rpm : 100 Del.quantity cm3/: 245.0...285.0 1000 s: (241.0...289.0) Rack travel in mm : 19.50...21.00

LOW IDLE

Speed rpm : 225
Rack travel in mm : 5.50...5.70
Del.quantity cm3/ : 10.0...15.0
1000 s: (7.5...17.5)
Spread cm3 : 4.50
1000 s: (7.50)

:

Remarks:

**Omnibus** 

APPLICATION

1st version 1mm rack travel less than full load rack tr: 11.20

rpm : 1235...1251

N18

Speed

BOSCH IN . PUMP TEST SPECIFICATIONS Note ranks : SCA 11.1 r : 15.06.93 : 02.93 Test sheet Edition Replaces Test oil : ISO-4113 Combination no. : 0 402 646 887 Injection pump Pump designation : PE6P120A720RS7188 EP type number : 0 412 626 832 Governor : RQV200...950PA725-7 : 0 421 813 803 Governor design. Governer no. Customer-spec. information : SCANIA Customer Engine : DSC 11 23 TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow vaive 1 417 413 025 Inlet press., bar: 2.50 Test nozzle holder : 1 688 901 104 assembly Openina : 250...253 pressure, bar Orifice plate diameter mm : 0,7 Test lines : 1 680 750 008 Outside diameter x Wall thickness x Length mm : 6.00x2.00x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant. per values BEGINNING OF DELIVERY Test pressure, bar: 25...27 : 4.40...4.50 Prestroke mm

(4.35...4.55)

Rack travel in mm : 9.00...12.00

M9

Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) Time to cyl. no. : 1 BASIC SETTING rpm: 700 1st speed Rack travel in mm : 13.80...13.90 Del.quantity cm3/: 25.1...25.3 100 s: (24.8...25.6) cm3 : 0.8Spread 100 s: (1.2) rpm : 250.02nd speed Rack travel in mm: 4.6...5.0

Del.quantity cm3/: 1.3...1.9

100 s: (1.0...2.2)

Spread cm3: 0.4

100 s: (0.8) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed 1.20...1.60 travel mm 350 2.40...3.00 2nd speed rpm travel mm 3rd speed 650 magn 4.50...5.10 travel mm 4th speed 1045 rpm : 8.40...8.60 : 1125 travel mm 5th speed rpm 9.30...9.70 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1150 Speed Rack travel in mm : 7.00...12.00 FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 700 Aneroid pressure h: 1500 Del.quantity : 251.0...253.0 Del.quantity : 231.0...256.0)

: 1-5-3-6-2-4

Firing order

cm3 : 8.00 1000 : (12.00) Spread

RATED SPEED

1st version Control lever

position degrees: 110...118

Testing:

1st rack travel in: 12.80 Speed rpm: 990...1000 2nd rack travel in: 4.00

rom : 1110...1140 Speed

4th rack travel in: 1250

rpm : 0.00...1.00 Speed

LOW IDLE 1 Control lever

position degrees: 60...68

Testing:

: 150 Speed COM Minimum rack trave: 6.00 rpm : 250

Rāck travel in mm : 4.60...4.80 Rack travel in mm : 2.00 Speed rpm : 370...430

Aneroid/Altitude Compensator Test

1st version Setting

Speed rpm Pressure

rpm : 500 hPa : 1500 mm : 13.80...13.90 Rack travel mm

Measurement

1/min: 500 Speed

1st pressure hPa : -

Rack travel in m: 10.20...10.60 2nd pressure hPa : 440

Rack travel in m: 12.00...12.10
3rd pressure hPa : 270
Rack travel in m: 10.90...11.10

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid pressure h: 1500

Speed rpm : 950
Del.quantity cm3/: 228.0...236.0
1000 s: (226.0...238.0)

Aneroid pressure h:

: 500 Speed rpm

Del.quantity cm3/: 152.0...154.0 1000 s: (149.0...157.0)

**BREAKAWAY** 

1st version 1mm rack travel less than

full load rack tr: 12.80 Speed rpm : 990...1000 Speed

STARTING FUEL DELIVERY

Speed rom

Del.quantity cm3/: 145.0...185.0 1000 s: (141.0...189.0) Rack travel in mm: 10.20...10.60

LOW IDLE

: 250 rpm

Rack travel in mm : 4.60...4.80

Remarks:

Delivery-valve spring pre-tension 3.2...3.4 mm.

Permissible alteration of 3.0...3.5 mm

Because of flattening, set the spring preload on new delivery-valve holders to 2.9...3.1 mm.

Start-of-delivery setting with ROBO diaphragm.

APPLICATION

Navy

BOSCH INJ. PLMP TEST SPECIFICATIONS

Note remarks

: DAF : 01.03.93 Test sheet Edition

: 10.92 Replaces Test oil : ISO-4113

Combination no. : 0 402 646 968

Injection pump

Pump designation : PE6P12DA32DRS7248

EP type number : 0 412 626 861

Governor

Governor design. : RQV275...1150PA986

: 0 421 813 920 Governer no.

Customer-spec. information Customer

Engine : RS 222 L

: 222.0 1st version kW : 2300 Rated speed

TEST BENCH REQUIREMENTS

Test oil

inlet temp. °C : 38...42

Overflow valve

: 1 417 413 025

Inlet press., bar: 1.50

Overflow

quantity min. 1/h: 120...140

Test nozzle holder

: 1 688 901 105 assembly

Opening.

: 207...210 pressure, bar

Orifice plate

diameter mm : 0,8

Test lines : 1 680 750 089

Outside diameter

x Wall thickness

x Length mm : 8.00x2.50x600

(A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 14.00...15.00 Firing order : 1-5-3-6-

2- 4

Phasing : 0-60-120-180-240-300

Tolerance + -- " : 0.50 (0.75)

BEGINNING OF DELIVERY DIFFERENCE

betw. rack trav. m: 4.90...5.10 & maximum rack tra: 11.7...12.7 Difference ° CS : 2.25...3.75

BASIC SETTING

1st speed rpm: 1000

Rack travel in mm : 12.20...12.30

Del.quantity cm3/: 18.4...18.6

100 s: (18.1...18.9)

cm3 : 0.5Spread

100 s: (0.9)

2nd speed rpm : 275.0
Rack travel in mm : 5.3...5.5
Del.quantity cm3/ : 1.3...1.9

100 s: (1.0...2.2)

Spread cm3 : 0.8100 s: (1.2)

(B) Setting of injection pump with governor

GUIDE SLEEVE TRAVEL

: 275 : 1.20...1.60 1st speed rpm travel mm

2nd speed : 315 rpm : 1.80...2.20 travel mm

: 1205 3rd speed rpm : 8.10...8.50 : 1340 travel mm

4th speed rpm : 9.70...9.90 travel mm

GUIDE SLEEVE POSITION Control-lever position

Degree: -1

rpm : 1325 Rack travel in mm : 9.90...12.50

FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed rpm : 1000 Aneroid pressure h: 1000 : 184.0...186.0 Del.quantity 1000 : (181.0...189.0) : 5.00 cm3 Spread 1000 : (9.00) RATED SPEED 1st version Control lever position degrees: 115...123 Testing: 1st rack travel in: 11.20 : 1190...1200 Speed rpm 2nd rack travel in: 4.00 Speed rpm: 1295...1325 4th rack travel in: 1450 rpm : 0.00...1.40 Speed LOW IDLE 1 Control lever position degrees: 79...87 Testing: Speed rpm Minimum rack trave: 6.70 rpm : 275 Speed Rack travel in mm : 4.60...4.80 CONSTANT REGULATION : 315...365 Speed rpm Aneroid/Altitude Compensator Test 1st version Setting : 600 Speed rpm Pressure hPa : 1000 Rack travel mm : 12.20...12.30 Measurement 1/min: 600 Speed 1st pressure hPa : -Rack travel in m: 9.30...9.50 2nd pressure hPa : 420 Rack travel in m: 11.60...11.70

3rd pressure hPa : 240

Rack travel in m: 10.30...10.50

FUEL DELIVERY CHARACTERISTICS

1st version
Aneroid pressure h: Speed rpm : 600
Del.quantity cm3/ : 120.0...122.0
1000 s: (117.0...125.0)

BREAKAWAY
1st version
1mm rack travel less than

full load rack tr: 11.20 Speed rpm : 1190...1200

Speed rpm : 275 Rack travel in mm : 4.60...4.80

Remarks:

Setting and blocking of pointer of start-of-delivery sensor on cyl. 1 start of delivery

APPLICATION
Omnibus

LOW IDLE

BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet Edition : DAF : 01.03.93 : 03.92 Replaces : ISO-4113 Test oil : 0 402 646 969 Combination no. Injection pump Pump designation : PE6P120A320RS7248Z : 0 412 626 862 EP type number Governor : RQV275...1150PA986 : 0 421 813 920 Governor design. Governer no. Customer-spec. information Customer : DAF Engine : RS 200 L TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 120...140 Test nozzle holder : 1 688 901 105 assembly Opening

pressure, bar : 207...210 Orifice plate diameter mm : 0,8 Test lines : 1 680 750 089 Outside diameter x Wall thickness x Length mm : 8.00x2.50x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

: 5.20...5.30 : (5.15...5.35) : 14.00...15.00 : 1-5- 3- 6-Prestroke mm Rack travel in mm : Firing order : 0-60-120-180-240-300 Phasing Tolerance + - ° : 0.50 (0.75) BEGINNING OF DELIVERY DIFFERENCE betw. rack trav. m: 4.90...5.10 & maximum rack tra: 10.8...11.8 Difference ° CS : 2.25...3.75 BASIC SETTING 1st speed rpm: 1000 Rack travel in mm : 11.30...11.40 Del.quantity cm3/: 16.4...16,5 100 s: (16.1...16.9) Spread cm3 : 0.5100 s: (0.9) 2nd speed rpm : 275.0
Rack travel in mm : 5.2...5.4
Del.quantity cm3/ : 1.3...1.9
100 s: (1.0...2.2) cm3 : 0.8Spread 100 s: (1.2) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 1st speed 275 1.20...1.60 rem travel mm : 315 2nd speed man : 1.80...2.20 travel mm 3rd speed : 1205 mqn : 8.10...8.50 : 1340 travel mm 4th speed rpm travel mm : 9.70...9.90 GUIDE SLEEVE POSITION Control-lever position Degree: -1 rpm : 1335 Speed Rack travel in mm : 9.00...11.60 FULL LOAD DELIV. AT FULL LOAD STOP 1st version

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

rpm : 1000 Speed Aneroid pressure h: 1000 : 164.0...166.0 1000 : (161.0...169.0) cm3 : 5.00 Del.quantity Spread 1000 : (9.00) RATED SPEED 1st version Control lever position degrees: 116...124 Testing: 1st rack travel in: 10.30 rpm : 1180...1190 Speed 2nd rack travel in: 4.00 Speed rpm : 1275...1305 4th rack travel in: 1450 Speed rpm : 0.00...1.40 LOW IDLE 1 Control Lever position degrees: 79...87 Testing: Speed rpm Minimum rack trave: 6.70 Speed rpm : 275 Rack travel in mm : 4.60...4.80 CONSTANT REGULATION rpm : 315...365 Speed Aneroid/Altitude Compensator Test 1st version Setting : 600 Speed rpm hPa Pressure 1000 : 11.30...11.40 Rack travel mm Measurement 1/min: 600 Speed 1st pressure hPa : -Rack travel in m: 9.10...9.30 2nd pressure hPa : 340 Rack travel in m: 10.70...10.80 3rd pressure hPa : 200 Rack travel in m: 9.60...9.80 FUEL DELIVERY CHARACTERISTICS 1st version Ameroid pressure h: -Speed rpm : 600

N24

Del.quantity cm3/: 115.0...117.0 1000 s: (112.0...120.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 10.30 Speed rpm : 1180...1190

LOW IDLE

Speed rpm : 275
Rack travel in mm : 4.60...4.80

Remarks:

Setting and blocking of pointer of start-of-delivery sensor on cyl. 1 start of delivery BOSCH INJ. PUMP TEST SPECIFICATIONS Note remarks Test sheet : DAF : 01.03.93 : 10.92 Edition Replaces Test oil : ISO-4113 Combination no. : 0 402 646 970 Injection pump Pump designation : PE6P120A320RS7248Y EP type number : 0 412 626 863 Governor Governor design. : RQV275...1150PA986 Governer no. : 0 421 813 920 Customer-spec. information Customer : DAF Engine : RS 180 L TEST BENCH REQUIREMENTS Test oil inlet temp. °C : 38...42 Overflow valve : 1 417 413 025 Inlet press., bar: 1.50 Overflow quantity min. 1/h: 120...140 Test nozzle holder assembly : 1 688 901 105 Opening pressure, bar : 207...210 Orifice plate diameter mm : 0,8 Test lines : 1 680 750 089 Outside diameter x Wall thickness x Length mm : 8.00x2.50x600 (A) Injection pump setting values Insp. values in parentheses Set equal delivery quant.

Prestroke mm : 5.20...5.30 : (5.15...5.35) Rack travel in mm : 14.00...15.00 Firing order : 1-5-3-6-2- 4 Phasing : 0-60-120-180-240-300 Tolerance + - ° : 0.50 (0.75) BEGINNING OF DELIVERY DIFFERENCE betw. rack trav. m: 4.90...5.10 & maximum rack tra: 10.2...11.2 Difference ° CS : 2.25...3.75 BASIC SETTING rpm: 1000 1st speed Rack travel in mm : 10.70...10.80 Del.guantity cm3/: 14.5...14.7 100 s: (14.2...15.0) cm3 : 0.5Spread 100 s: (0.9) 2nd speed rpm : 275.0 Rack travel in mm : 5.3...5.5 Del.quantity cm3/ : 1.3...1.9 100 s: (1.0...2.2) 8.0 : Emc Spread 100 s: (1.2) (B) Setting of injection pump with governor GUIDE SLEEVE TRAVEL 275 1.20...1.60 1st speed rpm travel mm 2nd speed 315 rpm : 1.80...2.20 travel mm 3rd speed : 1205 rpm : 8.10...8.50 travel mm 4th speed : 1340 rpm : 9.70...9.90 travel mm GUIDE SLEEVE POSITION Control-lever position Degree: -1 Speed rpm : 1340 Rack travel in mm : 8.40...11.00 FULL LOAD DELIV. AT FULL LOAD STOP 1st version

per values

BEGINNING OF DELIVERY

Test pressure, bar: 25...27

Speed rpm : 1000Aneroid pressure h: 1000 Del.quantity : 145.5...147.5 1000 : (142.5...150.5) Spread cm3 : 5.00 : (9.00) 1000 RATED SPEED 1st version Control lever position degrees: 116...124 Testing: 1st rack travel in: 9.70 Speed rpm : 1180...1190 2nd rack travel in: 4.00 rpm : 1265...1295 Speed 4th rack travel in: 1450 : 0.00...1.40 Speed rpm LOW IDLE 1 Control lever position degrees: 79...87 Testing: : 175 Speed **MQU** Minimum rack trave: 6.70 Speed rpm : 275
Rack travel in mm : 4.60...4.80 CONSTANT REGULATION rpm : 315...365 Speed Aneroid/Altitude Compensator Test 1st version Setting rpm : 600 hPa : 1000 Speed Pressure Rack travel mm : 10.70...10.80 Measurement 1/min: 600 Speed 1st pressure hPa : -Rack travel in m: 9.40...9.60
2nd pressure hPa : 260
Rack travel in m: 10.30...10.40
3rd pressure hPa : 190
Rack travel in m: 9.80...10.00 FUEL DELIVERY CHARACTERISTICS 1st version Aneroid pressure h: -

rpm : 600

Speed

N26

Det.quantity cm3/: 119.0...121.0 1000 s: (116.0...124.0)

#### **BREAKAWAY**

1st version 1mm rack travel less than

full load rack tr: 9.70 Speed rpm : 1180...1190

LOW IDLE

Speed rpm : 275 Rack travel in mm : 4.60...4.80

Remarks:

Setting and blocking of pointer of start-of-delivery sensor on cyl. 1 start of delivery BOSCH INJ. PUMP TEST SPECIFICATIONS 5.30...5.40 (5.25...5.45) 14.00...15.00 1-5-3-6-Prestroke mm Note remarks Rack travel in mm : Firing order 2- 4 Test sheet : DAF : 01.03.93 : 03.92 Edition Replaces Test oil : ISO-4113 Phasina : 0-60-120-180-240-300 Combination no. : 0 402 646 971 Tolerance + - \* : 0.50 (0.75) Injection pump Time to cyl. no. : 1 Pump designation : PE6P120A320RS7218Z EP type number : 0 412 626 847 BEGINNING OF DELIVERY DIFFERENCE Governor Governor design. : RQV275...1000PA939-2 Governer no. : 0 421 813 986 betw. rack trav. m: 4.90...5.10 & maximum rack tra: 13.5...14.5 Difference ° CS : 2.25...3.75 Customer-spec. information Customer : DAF BASIC SETTING : WS 242 L Engine 1st speed rpm: 850 TEST BENCH REQUIREMENTS Rack travel in mm : 13.80...13.90 Del.quantity cm3/: 20.5...20.7 Test oil : 38...42 inlet temp. °C 100 s: (20.2...21.0) Overflow vaive : 1 417 413 025 cm3 : 0.5Spread Inlet press., bar: 1.50 100 s: (0.9) Overflow 2nd speed rpm : 275.0Rack travel in mm : 6.1...6.3

Del.quantity cm3/ : 1.4...2.0

100 s: (1.1...2.3)

Spread cm3 : 0.8 quantity min. 1/h: 95...115 Test nozzle holder : 1 688 901 105 100 s: (1.2) Opening pressure, bar : 207...210 (B) Setting of injection pump with governor Orifice plate diameter mm : 0,8 GUIDE SLEEVE TRAVEL 1045 7.70...8.20 275 1.10...1.60 1st speed rom travel mm Test lines : 1 680 750 089 2nd speed rom travel mm 3rd speed Outside diameter 380 rpm x Wall thickness 2.40...2.90 travel mm 675 4.20...4.70 x Length mm : 8.00x2.50x600 4th speed rpm travel mm (A) Injection pump setting values 5th speed 1310 rpm Insp. values in parentheses Set equal delivery quant. : 11.00...12.00 travel mm per values GUIDE SLEEVE POSITION Control-lever position BEGINNING OF DELIVERY Degree: -1 Speed rpm : 1130 Rack travel in mm : 12.60...15.20 Test pressure, bar: 25...27

FULL LOAD DELIV. AT FULL LOAD STOP 1st version Speed : 850 rpm Aneroid pressure h: 1000 Del.quantity : 205.0...207... 1000 : (202.0...210.0) : 5.00 Spread cm3 1000 : (9.00) RATED SPEED 1st version Control lever position degrees: 115...123 Testing: 1st rack travel in: 12.80 rpm : 1040...1050 Speed 2nd rack travel in: 4.00 Speed rpm : 1145...1175 4th rack travel in: 1250 Speed rpm : 0.00...1.40 LOW IDLE 1 Control lever position degrees: 78...86 Testing: Speed rpm Minimum rack trave: 7.50 Speed rpm : 275 Rack travel in mm : 4.90...5.10 CONSTANT REGULATION rpm : 300...350 Speed Aneroid/Altitude Compensator Test 1st version Setting Speed : 600 rpm Pressure hPa : 1000 Rack travel mm : 13.80...13.90 Measurement Speed  $1/\min: 600$ 1st pressure hPa : -Rack travel in m: 11.70...11.90 2nd pressure hPa : 420 Rack travel in m: 13.30...13.40 3rd pressure hPa : 260 Rack travel in m: 12.20...12.40

FUEL DELIVERY CHARACTERISTICS

1st version Aneroid pressure h: -Speed rpm : 600 Del.quantity cm3/ : 147.0...149.0 1000 s: (144.0...152.0)

BREAKAWAY

1st version 1mm rack travel less than

full load rack tr: 12.80 Speed rpm : 1040...1050

LOW IDLE

Speed rpm : 275
Rack travei in mm : 4.90...5.10

Remarks:

Setting and blocking of pointer of start-of-delivery sensor on cyl. 1 start of delivery